

SOFTWARE

WISSENCHAFTLICH

@nikitonsky



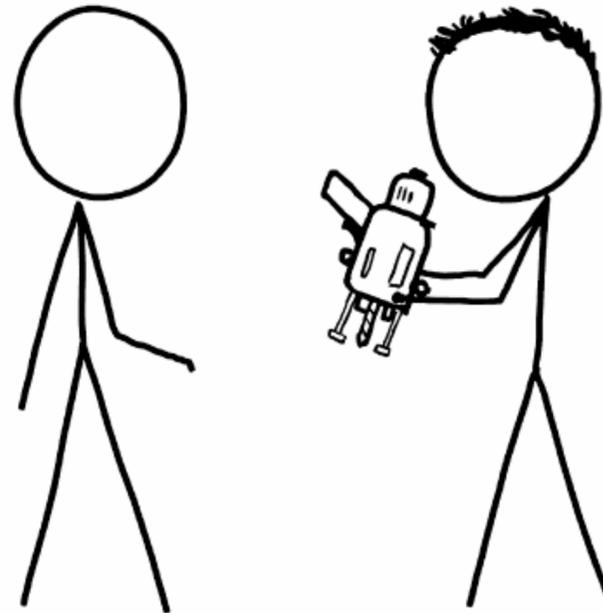


Мало напоминает
инженерное дело

Машины
Дома
Самолеты
Мосты

WE NEED TO MAKE 500 HOLES IN THAT WALL,
SO I'VE BUILT THIS AUTOMATIC DRILL. IT USES
ELEGANT PRECISION GEARS TO CONTINUALLY
ADJUST ITS TORQUE AND SPEED AS NEEDED.

GREAT, IT'S THE PERFECT WEIGHT!
WE'LL LOAD 500 OF THEM INTO
THE CANNON WE MADE AND
SHOOT THEM AT THE WALL.



HOW SOFTWARE DEVELOPMENT WORKS



Peter Wemm

@karinjiri

Follow



Ever wondered why the python uuid library is so slow? At run time it effectively does a gnu autoconf with cc/gcc/clang/ld/lld to find if libuuid exists and has the functions it needs and builds a cpython wrapper. Every. Single. Time. I hate computers. And people.

3:26 AM - 22 Sep 2018

219 Retweets 708 Likes



16

219

708



Всё невыносимо тормозит



```
Project
tonsky.me
  _layouts
  _posts
  _site
  .git
  .idea
  .vscode
  blog
  buttons
  cards
  f
  patrons
  projects
  solar-weather
  talks
  _config.yml
  .DS_Store
  .gitignore
  CNAME

index.html
1 ---
2 layout: default
3 title: Blog
4 ---
5
6 <ul class=menu>
7   <li><span class="menu__item menu__item_selected" href="/">Blog</span>
8   <li><a class="menu__item" href="/talks/">Talks</a>
9   <li><a class="menu__item" href="/projects/">Projects</a>
10  <li><a class="menu__item" href="/patrons/">Patrons</a>
11 </ul>
12
13 <div class="post">
14
15   <div class="about">
16     
17     <div class="about_inner">
18       <p>Hi!</p>
19       <p>I'm Nikita. Here I write about programming and UI design <a style="margin-
20       <p>I also create open-source stuff: Fira Code, AnyBar, DataScript and Rum.<br>
21     </div>
22   </div>
```

```
FOLDERS
tonsky.me
  .idea
  .vscode
  _layouts
  _posts
  _site
  blog
  buttons
  cards
  f
  patrons
  projects
  solar-weather
  talks
  .gitignore
  /* _config.yml
  CNAME
  favicon.png
  index.html
  photo.gif
  /* style.css

index.html
1 ---
2 layout: default
3 title: Blog
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5
6 <ul class=menu>
7   <li><span class="menu__item menu__item_selected" href="/">Blog</span>
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10  <li><a class="menu__item" href="/patrons/">Patrons</a>
11 </ul>
12
13 <div class="post">
14
15   <div class="about">
16     
17     <div class="about_inner">
18       <p>Hi!</p>
19       <p>I'm Nikita. Here I write about programming and UI design <a style="margin-left
20         : 5px" class="btn-subscribe" href="/blog/how-to-subscribe/" target="_blank"><
21         svg viewBox="0 0 800 800"><path d="M493 652H392c0-134-111-244-244-244V307c189 0
22         345 156 345 345zm71 0c0-228-188-416-416-416V132c285 0 520 235 520z"/><circle
23         cx="219" cy="581" r="71" /></svg> Subscribe</a></p>
```

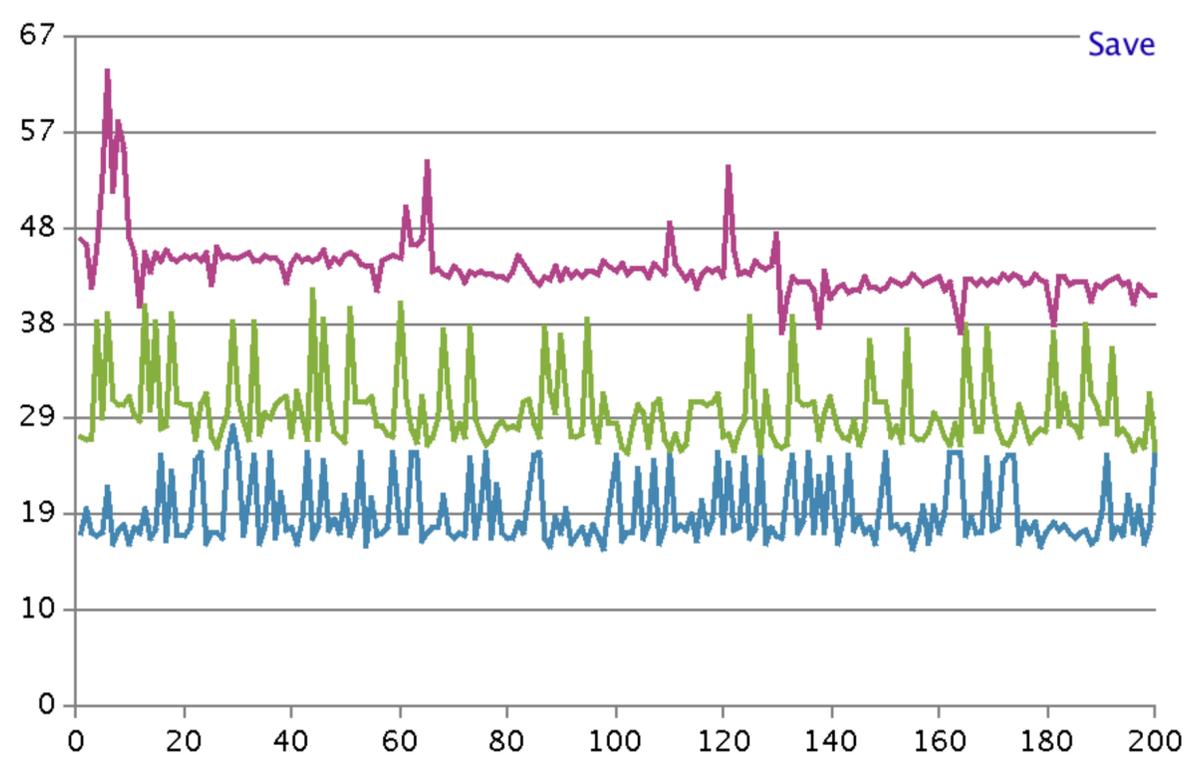
```
index.html — tonsky.me
EXPLORER
OPEN EDITORS
  _config.yml
  index.html
TONSKY.ME
  _layouts
  _posts
  blog
  buttons
  cards
  f
  patrons
  projects
  solar-weather
  talks
  _config.yml
  .gitignore
  CNAME
  favicon.png
  index.html
  photo.gif
  style.css
  talk.css
OUTLINE
1 ---
2 layout: default
3 title: Blog
4 ---
5
6 <ul class=menu>
7   <li><span class="menu__item menu__item_selected" href="/">Blog</span>
8   <li><a class="menu__item" href="/talks/">Talks</a>
9   <li><a class="menu__item" href="/projects/">Projects</a>
10  <li><a class="menu__item" href="/patrons/">Patrons</a>
11 </ul>
12
13 <div class="post">
14
15   <div class="about">
16     
17     <div class="about_inner">
18       <p>Hi!</p>
19       <p>I'm Nikita. Here I write about programming and UI design <a style="margin-left:
20       5px" class="btn-subscribe" href="/blog/how-to-subscribe/" target="_blank"><svg viewBox="0 0
21       800 800"><path d="M493 652H392c0-134-111-244-244V307c189 0 345 156 345zm71
22       0c0-228-188-416-416-416V132c285 0 520 235 520z"/><circle cx="219" cy="581"
23       r="71" /></svg> Subscribe</a></p>
24     <p>I also create open-source stuff: Fira Code, AnyBar, DataScript and Rum.<br>If you
25     like what I do and want to get early access to my articles (along with other benefits), you
26     should <a href="https://patreon.com/tonsky" target="_blank">support me on Patreon</a>.</p>
27   </div>
28 </div>
```

```
tonsky.me [~/Dropbox/ws/tonsky.me] - .../index.html
Project
  .gitignore
  _config.yml
  CNAME
  favicon.png
  index.html
  photo.gif
  style.css
  talk.css
  External Libraries
  Scratches and Consoles
index.html
1 ---
2 layout: default
3 title: Blog
4 ---
5
6 <ul class=menu>
7   <li><span class="menu__item menu__item_selected" href="/">Blog</span>
8   <li><a class="menu__item" href="/talks/">Talks</a>
9   <li><a class="menu__item" href="/projects/">Projects</a>
10  <li><a class="menu__item" href="/patrons/">Patrons</a>
11 </ul>
12
13 <div class="post">
14
15   <div class="about">
16     
17     <div class="about_inner">
18       <p>Hi!</p>
19       <p>I'm Nikita. Here I write about programming and UI design <a style="..." class="btn-subscribe
20       <p>I also create open-source stuff: Fira Code, AnyBar, DataScript and Rum.<br>If you like what
21     </div>
22   </div>
23
24   <h1>2018</h1>
25   {% for post in site.posts %}
26   {% assign year = post.date | date: "%-Y" %}
```

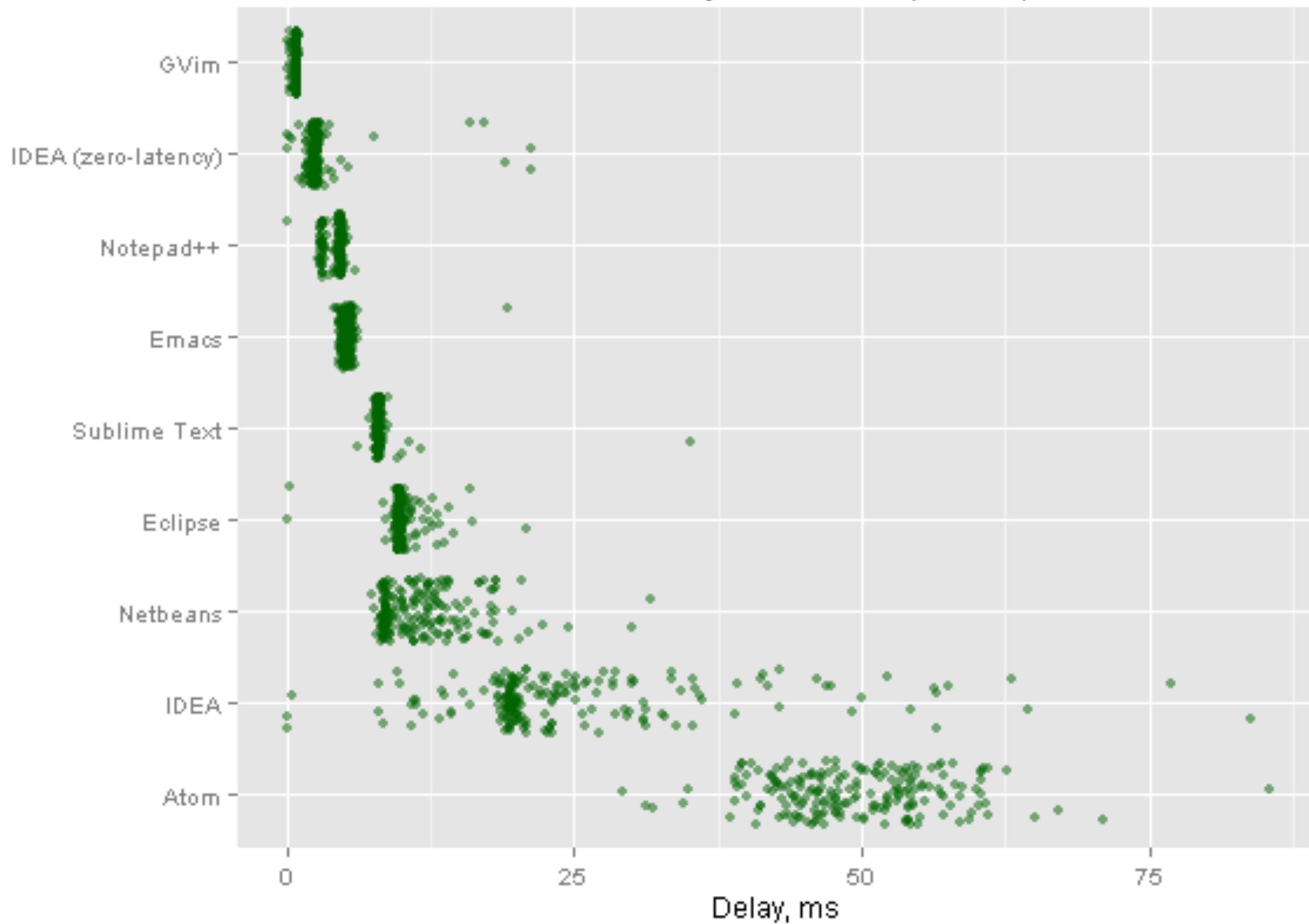
select multiple items to compare

#	Title	Min, ms	Max, ms	Avg, ms	SD, ms
1	Desktop Emacs	7.4	26.0	9.9	1.9
2	TextEdit	8.9	25.2	10.4	1.7
3	OS X Terminal	11.3	28.4	13.9	4.6
4	Terminal Emacs	11.4	58.7	13.4	4.9
5	Vim bare	11.4	62.4	13.3	5.0
6	Sublime	15.9	28.2	19.4	3.2
7	TextMate 2 beta9	9.8	27.0	20.9	6.7
8	Vim with ruler	13.3	63.1	22.7	6.5
9	Xcode	11.8	29.6	26.1	4.8
10	Code Mirror	13.5	30.8	27.2	2.4
11	Aquamacs	23.7	46.4	27.3	3.6
12	Atom	25.3	41.6	29.7	3.7
13	Vim with powerline	24.2	64.0	37.4	15.5
14	Idea 2016 zero-latency	11.4	47.7	38.3	9.0
15	Idea 2016	37.4	63.5	43.9	2.9
16	iTerm2	38.8	70.9	44.5	3.0
17	iTerm2 Vim bare	38.7	92.4	44.6	4.2
18	Light Table	40.8	79.1	47.8	5.9
19	VS Code	30.0	66.0	48.3	6.8

Chart: Series (ms / n) Distribution (% / ms)



Editor latency in Windows (text file)

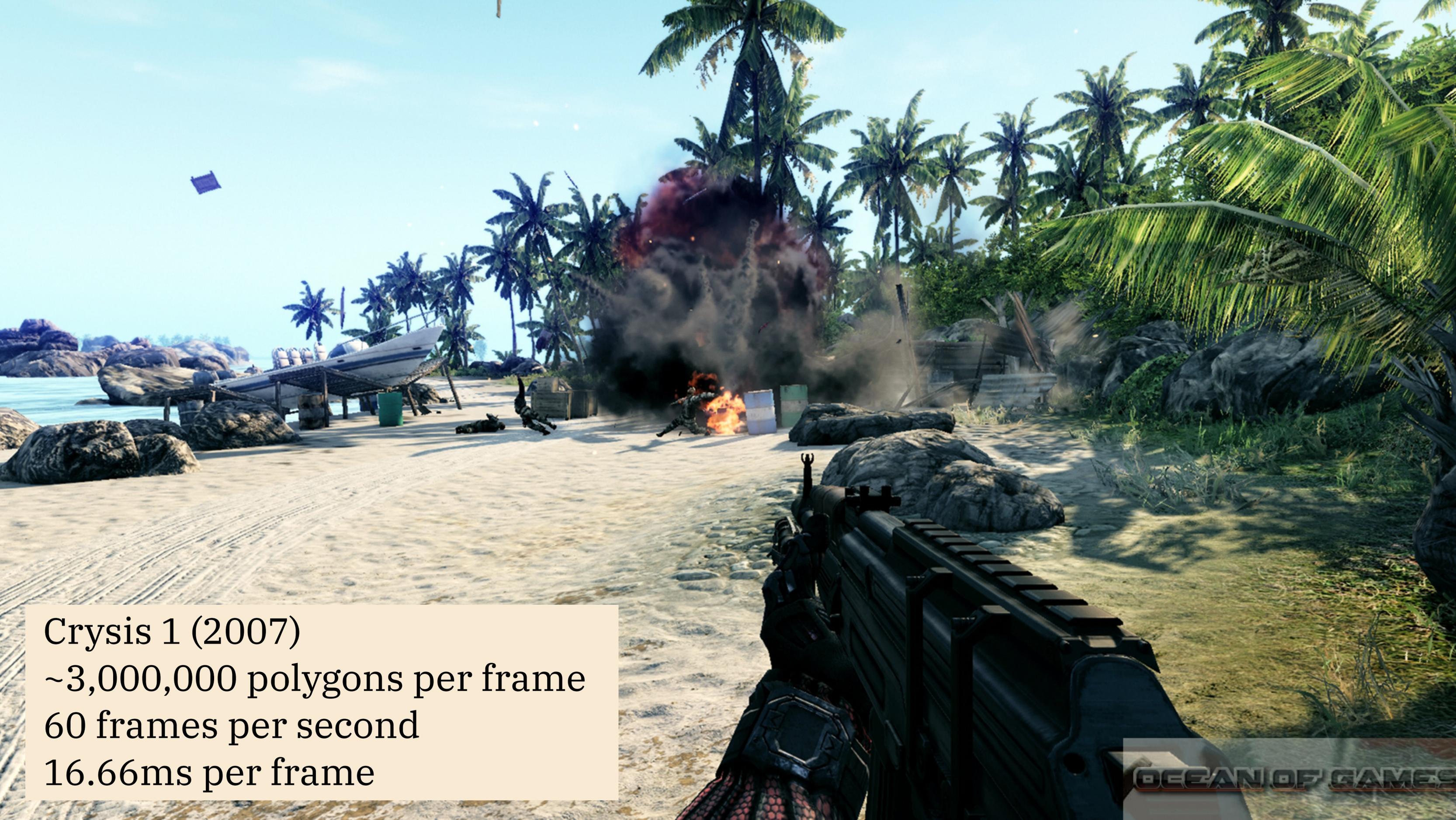


```

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```

250×50 = 12,500 chars for 1920×1080 screen

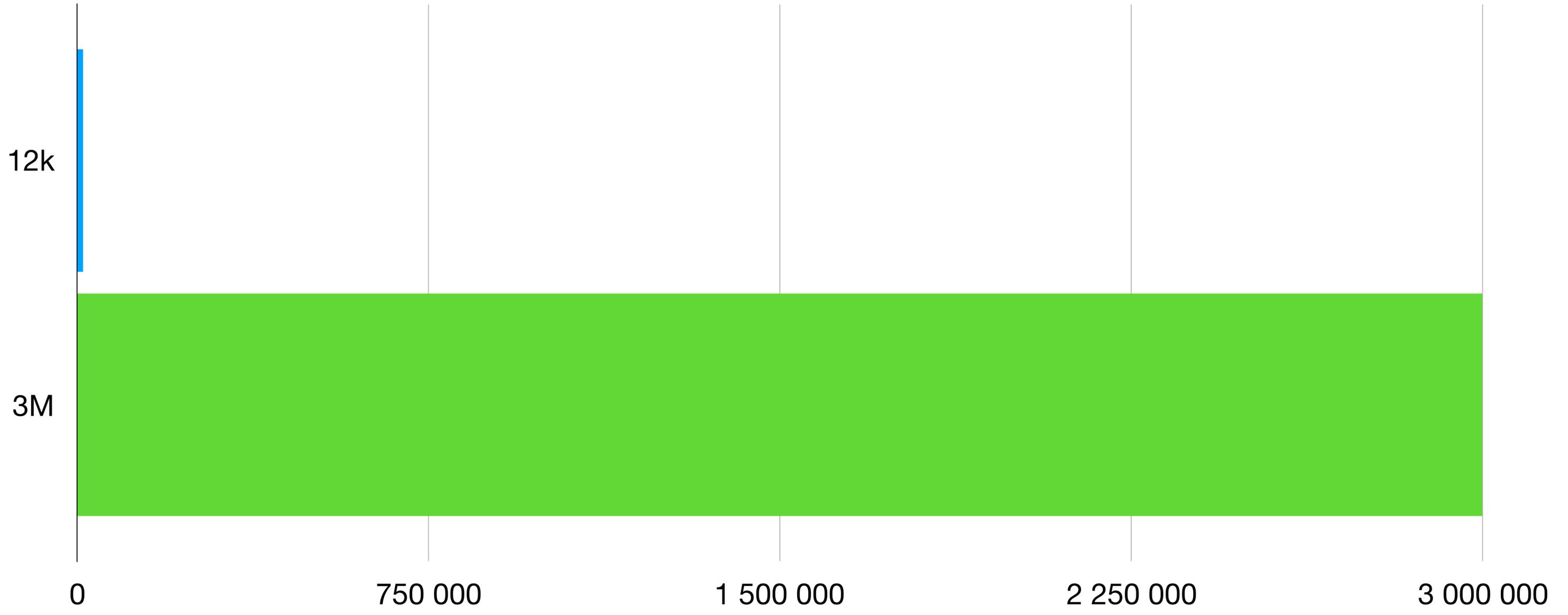


Crysis 1 (2007)

~3,000,000 polygons per frame

60 frames per second

16.66ms per frame



SOFTWARE



HARDWARE



SOFTWARE



A hand-drawn illustration of a house and a person with a dog, positioned on a flat base of the stone wall. A thick black arrow points from the word 'SOFTWARE' down towards these icons.

HARDWARE



Hand-drawn white clouds and squiggly lines in the sky above the stone wall. A thick black arrow points from the word 'HARDWARE' up towards the sky.



**Всё непропорционально
большое**

1 2 3 4 5 6 7 8 9 0

q w e r t y u i o p

a s d f g h j k l

↑ z x c v b n m ↵

?123



English

.



← Storage



Gboard
7.6.13.215505041-release-arm64-v8a

CLEAR DATA

CLEAR CACHE

Space used

App size 79.32 MB

User data 50.41 MB

Cache 504 kB

Total 130 MB



CATEGORIES

- All
- Letter
- Number
- Punctuation
- Separator
- Symbol
- Mark
- Other

LANGUAGES

- Latin
- Cyrillic
- Greek
- Hebrew
- Arabic
- Chinese
- Japanese
- Hangul
- Indic
- Southeast Asia
- Other Scripts
- Miscellaneous

FILTERS

- Incompatible Master
- Mac Roman (218/242)
- Windows... (209/217)
- liga
- parts
- removed
- blue

Unicode

export

×

FiraCode.glyphs - Fira Code								NotoSans-Regular.ttf - Noto Sans								
☪	İ	Ж	Ж	Ѓ	Ѓ	Љ	Љ	Н	Н	Н	Н	Ч	Ч	М	М	І
uni04BF	uni04C0	uni04C1	uni04C2	uni04C3	uni04C4	uni04C5	uni04C6	uni04C7	uni04C8	uni04C9	uni04CA	uni04CB	uni04CC	uni04CD	uni04CE	uni04CF
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uni04F2	uni04F3	uni04F4	uni04F5	uni04F6	uni04F7	uni04F8	uni04F9	uni04FA	uni04FB	uni04FC	uni04FD	uni04FE	uni04FF	uni0500	uni0501	uni0502
д	з	з	з	з	Л	л	Н	н	Г	г	Т	т	ε	ε	Л	л
uni0503	uni0504	uni0505	uni0506	uni0507	uni0508	uni0509	uni050A	uni050B	uni050C	uni050D	uni050E	uni050F	uni0510	uni0511	uni0512	uni0513
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uni1EC2	uni1EC3	uni1EC4	uni1EC5	uni1EC6	uni1EC7	uni1EC8	uni1EC9	uni1ECA	uni1ECB	uni1ECC	uni1ECD	uni1ECE	uni1ECF	uni1ED0	uni1ED1	uni1ED2
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uni1ED3	uni1ED4	uni1ED5	uni1ED6	uni1ED7	uni1ED8	uni1ED9	uni1EDA	uni1EDB	uni1EDC	uni1EDD	uni1EDE	uni1EDF	uni1EE0	uni1EE1	uni1EE2	uni1EE3
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uni1EF7	uni1EF8	uni1EF9	uni20AB	circu...tecomb	circu...vecomb	circu...okcomb	circu...decomb	breve...tecomb	breve...ecomb	breve...kcomb	breve...ecomb	cyrillichookleft	cyrillic...okUC	uni0162	uni0163	uni0180

Dimensions

Fit Curve

60% 80%

Layers

Copy

Transformations

10% 10%

0 selected 3246/3246 glyphs

Search

CATEGORIES

- All
- Letter
- Number
- Punctuation
- Separator
- Symbol
- Mark
- Other

LANGUAGES

- Latin
- Cyrillic
- Greek
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- Southeast Asia
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- Miscellaneous

FILTERS

- Incompatible Master
- Mac Roman (218/242)
- Windows... (209/217)
- liga
- parts
- removed
- blue

Glyph Name
LSB RSB
Width
left kerning group
right kerning group
export

Unicode

☪	Ī	Ж	Ж̃	Ѓ	Ѓ̃	Љ	Љ̃	Њ	Њ̃	Њ̇	Њ̇̃	Ч	Ч̃	М	М̃	І
uni04BF	uni04C0	uni04C1	uni04C2	uni04C3	uni04C4	uni04C5	uni04C6	uni04C7	uni04C8	uni04C9	uni04CA	uni04CB	uni04CC	uni04CD	uni04CE	uni04CF
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uni04D0	uni04D1	uni04D2	uni04D3	uni04D4	uni04D5	uni04D6	uni04D7	uni04D8	uni04D9	uni04DA	uni04DB	uni04DC	uni04DD	uni04DE	uni04DF	uni04E0
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uni04E1	uni04E2	uni04E3	uni04E4	uni04E5	uni04E6	uni04E7	uni04E8	uni04E9	uni04EA	uni04EB	uni04EC	uni04ED	uni04EE	uni04EF	uni04F0	uni04F1
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<h1>3246 glyphs</h1>																
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uni1ED3	uni1ED4	uni1ED5	uni1ED6	uni1ED7	uni1ED8	uni1ED9	uni1EDA	uni1EDB	uni1EDC	uni1EDD	uni1EDE	uni1EDF	uni1EE0	uni1EE1	uni1EE2	uni1EE3
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Dimensions

Fit Curve

60% 80%

Layers

Copy

Transformations

10% 10%

0 selected 3246/3246 glyphs

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- liga
- parts
- removed
- blue

Glyph Name
 LSB RSB
 Width
 left kerning group
 right kerning group
 export
 Unicodes

☪	İ	Ж	Ж	Ѓ	Ѓ	Љ	Љ	Њ	Њ	Њ	Њ	Ч	Ч	М	М	І
uni04BF	uni04C0	uni04C1	uni04C2	uni04C3	uni04C4	uni04C5	uni04C6	uni04C7	uni04C8	uni04C9	uni04CA	uni04CB	uni04CC	uni04CD	uni04CE	uni04CF
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uni1ED3	uni1ED4	uni1ED5	uni1ED6	uni1ED7	uni1ED8	uni1ED9	uni1EDA	uni1EDB	uni1EDC	uni1EDD	uni1EDE	uni1EDF	uni1EE0	uni1EE1	uni1EE2	uni1EE3
Ụ	ụ	Ủ	ủ	Ứ	ứ	Ừ	ừ	Ử	ử	Ữ	ữ	Ự	ự	Ỳ	ỳ	Ỳ
uni1EE4	uni1EE5	uni1EE6	uni1EE7	uni1EE8	uni1EE9	uni1EEA	uni1EEB	uni1EEC	uni1EED	uni1EEE	uni1EEF	uni1EF0	uni1EF1	uni1EF4	uni1EF5	uni1EF6
ỳ	Ỳ	ỳ	đ	˘	˘	˘	˘	˘	˘	˘	˘	˘	˘	˘	˘	˘
uni1EF7	uni1EF8	uni1EF9	uni20AB	circu...tecomb	circu...vecomb	circu...okcomb	circu...decomb	breve...tecomb	breve...ecomb	breve...kcomb	breve...ecomb	cyrillichookleft	cyrillic...okUC	uni0162	uni0163	uni0180

313 KB

Dimensions

HO
no t

Fit Curve

60% 80%

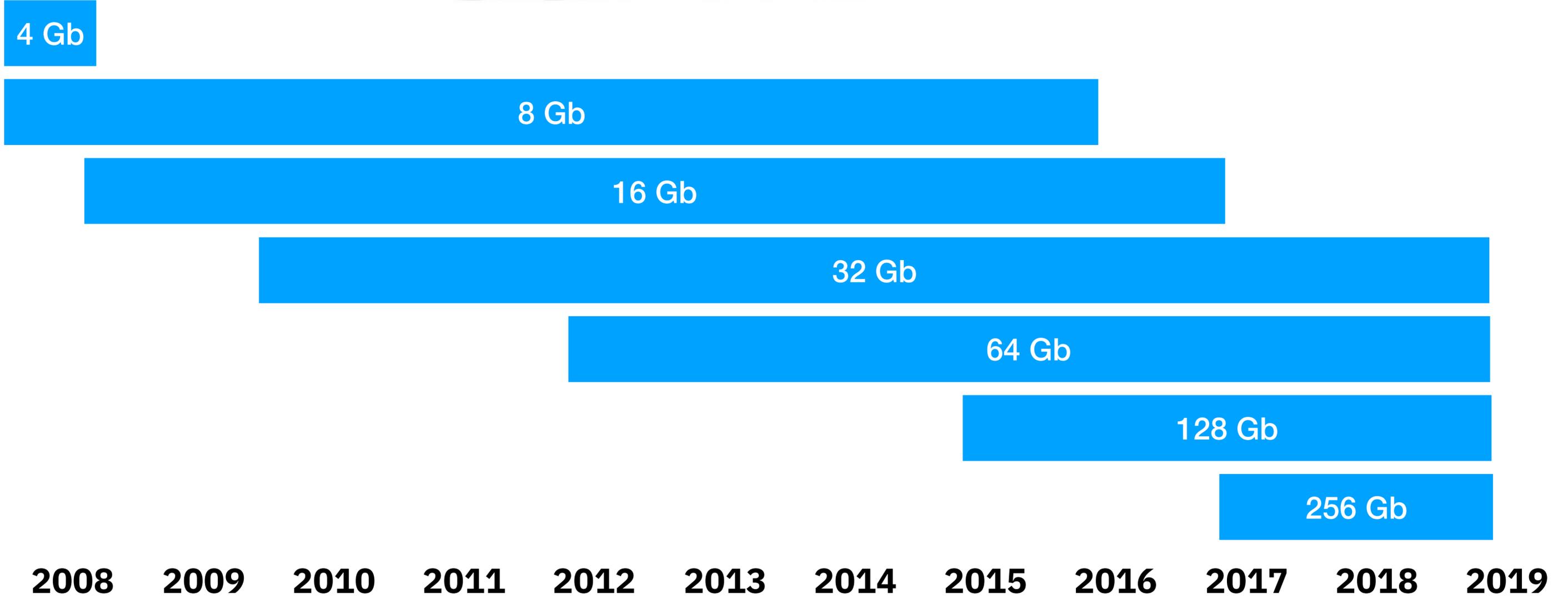
Layers

Copy

Transformations

10% 10%

0 selected 3246/3246 glyphs



Больше \neq лучше

Больше = медленнее
сложнее
непонятнее
неконтролируемое
ненадежнее
ресурсоёмче

Всё гниёт

| **No active development**

Proposed

In development

71 canary/dev

70 beta

69 stable

68

67

66

65

64

63

62

61

60

59

58

57

56

55

54

53

52

51

50

49

48

47

46

45

44

43

42

Features: 22

intervention



Subscribe

Disable scripts for Data Saver users on slow connections

JavaScript

If a Data Saver user is on a 2G-speed or slower network according to the NetInfo API, Chrome disables scripts and ...

Image replacement for Data Saver users on slow connections

Misc

If a Data Saver user is on a 2G-speed or slower network according to the NetInfo API, Chrome replaces images wit...

PauseFrame

JavaScript

Allows for pausing of frames (via JavaScript API as well as browser intervention). When a frame is paused, it doesn...

Freeze task queues in background on Android

Performance

All freezable task queues (beyond timers and loading) in blink scheduler will be frozen when a renderer has been i...

Intervention: Stop loading of non-critical resources on slow pages for data saver users

Performance

On webpages that are expected to load slowly, stop loading of non-critical resources. This includes (but is not limit...

Intervention: Throttling dedicated workers when page is backgrounded

Performance

This intervention throttles work in dedicated workers associated with background pages. The mechanism is roughl...

Treat Document Level Wheel/Mousewheel Event Listeners as Passive

DOM

wheel/mousewheel event listeners that are registered on document level targets (window.document, window.docu...

Intervention Reports

Misc



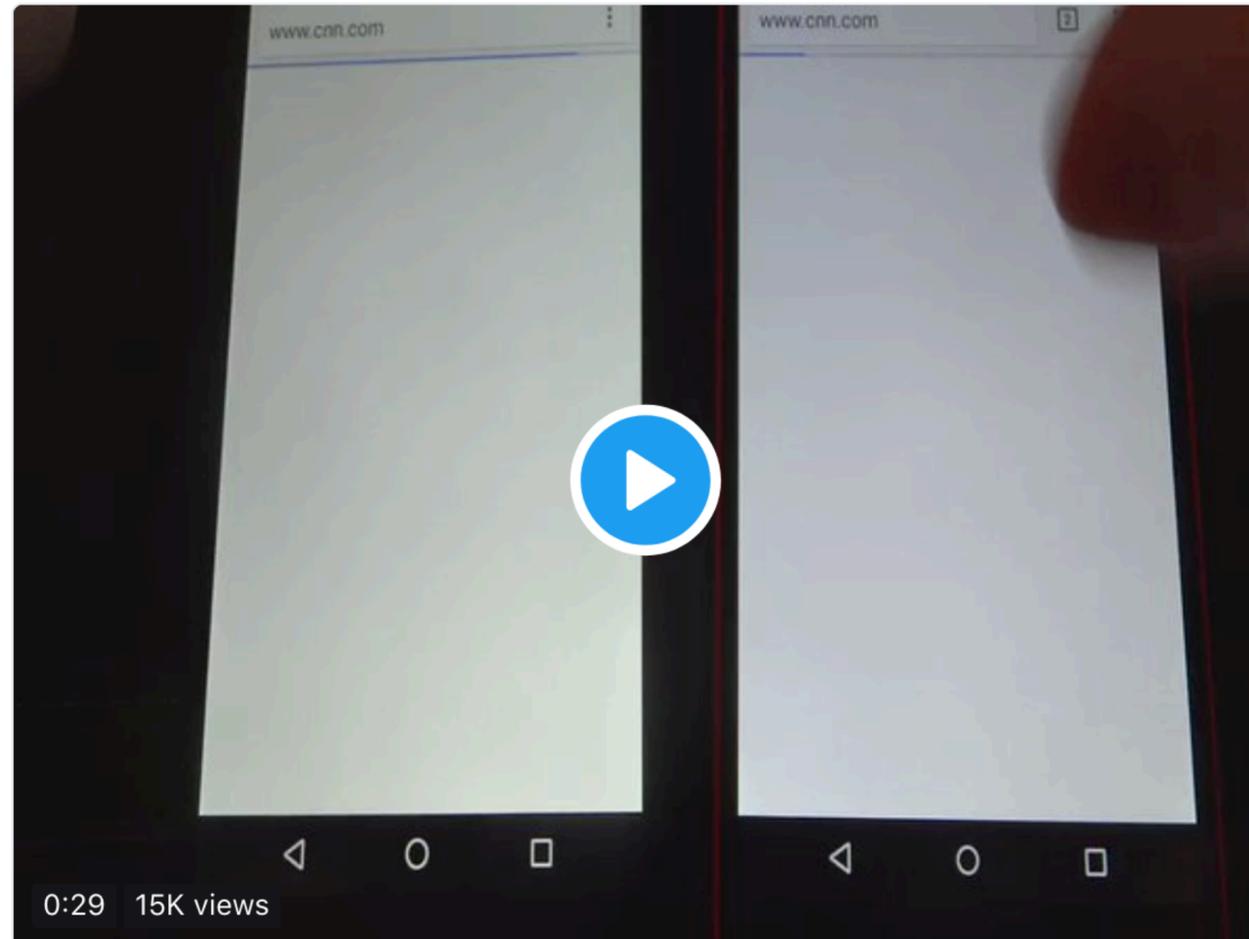
Rick Byers

@RickByers

Follow



An example of the impact of making touch listeners "passive" on a JS-heavy web page. See github.com/WICG/EventListener ...



9:59 AM - 12 Apr 2016

428 Retweets 630 Likes



6

428

630



A.D. Slaton @adslaton · 29 Apr 2016
Replying to [@RickByers](#)
[@RickByers](#) thank you for the demo against our site. We will take a look at what you have documented and apply updates.

1 1 0 0

Rick Byers @RickByers · 30 Apr 2016
[@adslaton](#) Awesome, thanks! Hopefully it's easy to make your touch listeners passive. I'm happy to help if there's anything we can do.

1 1 0 0

Rick Byers @RickByers · 30 Apr 2016
[@adslaton](#) Even better would be to remove the sync XHR and other very long-running script during load, but I know that's more work.

0 1 0 0

Adam Bradley @adamdbradley · 12 Apr 2016
Replying to [@RickByers](#)
[@RickByers](#) how did you do that test to see the differences?

1 1 1 0

Rick Byers @RickByers · 12 Apr 2016
[@adamdbradley](#) A custom build of Chrome that forced all touch listeners to be passive. We'll add a flag soon: bugs.chromium.org/p/chromium/iss...

0 1 5 0

jordwalke @jordwalke · 13 Apr 2016
Replying to [@RickByers](#)
[@RickByers](#) I strongly, but super-respectfully suggest against this. It masks serious issues. I do not believe this is how the web wins.

1 2 9 0

jordwalke @jordwalke · 13 Apr 2016
[@RickByers](#) If the page is JS heavy, chances are it's going to handle clicks/taps in JS, but they will not be responsive - a latent issue.

2 1 4 0

Rick Byers @RickByers · 13 Apr 2016
[@jordwalke](#) Also acceptable latency for tap is maybe 150ms but for scroll start it's <50ms so there is a middle ground of value here...

0 1 0 0

Rick Bias @rickbiastwit · 17 Feb 2017
Replying to [@RickByers](#)
and it's not cool to break tons of drag/drop, scroll/zoom browser default behaviour prevention only to achieve nearly nothing

0 1 0 0

Rick Bias @rickbiastwit · 17 Feb 2017
Replying to [@RickByers](#)
chrome scroll intervention demo is definitely misleading. I tried on top end devices, no perceivable difference, enabled or not.

0 1 0 0

mithrandirbooga 10 months ago
Don't break the web, douchecanoes.

6 0 REPLY

Hide replies ^

Zhuinden 6 days ago
Too late it's done

0 0 REPLY

David Tch 1 year ago
Scrolling is nice, but that breathing on background is very creepy))))

2 0 REPLY

Alex Fox 2 years ago
still lag...only Opera

1 0 REPLY

侯志强 1 year ago
这个简直就是太棒了

0 0 REPLY

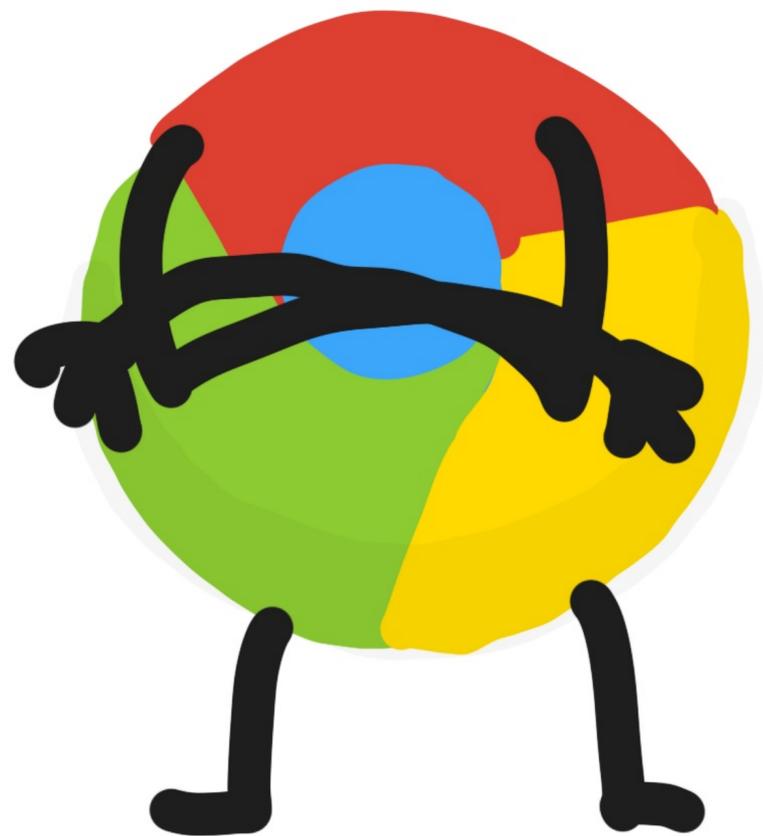
mott M 1 year ago
passive : true
is only for scrolling or also for touchmove?

0 0 REPLY

View reply v

ET 10 months ago (edited)
Nice scrolling. But I'd prefer if Googles Poo-in-loo engineers didn't break existing website compat.

0 0 REPLY



ПРИНЯТО

Июнь 2016 → Февраль 2017

8 месяцев



RByers commented on 9 Feb 2017

Member



Since it's specific to the history of this issue, I'll re-iterate what I [said on the Chrome bug](#) here:

I'm deeply sorry for the frustration this has caused you. We've long tried the "opt-in" approach but have learned that on average developers don't make the effort to opt-in to better performance. In particular, in this case we started pushing passive touch listeners heavily [back in June] (<https://developers.google.com/web/updates/2016/06/passive-event-listeners>) including during the Google I/O Chrome keynote, and outreach to a large number of frameworks and other major sites would we knew could benefit. They almost all told us "can't you just detect this and do it for me automatically so I don't have to change my code?". As you can see in the graph [here](#), we've had very little impact on real-world scroll performance via the "opt-in+outreach" approach.

So we believe that when only tiny number of sites are negatively impacted, and a huge number are positively impacted, we should prefer a "fast by default" policy instead.

We've done our best to do this in a responsible way - in discussion with all the browser vendors and standards groups, with an easy fix (touch-action), a full opt-out (though I admit it's not exactly easy), console warnings, developer outreach, and careful roll out via trials, dev and beta channel where were heard very little complaints. We need to work harder at this - eg. see [#44](#). But in Chrome we're fundamentally unwilling to allow the mobile web to continue to die from performance bankruptcy. Other browsers are less aggressive, and people who prefer to be more conservative (preferring maximal compatibility over being part of moving the web forward aggressively) should prefer to use a more conservative browser.



4



3

- Web Updates (2018)
- Web Updates (2017)
 - All Articles
 - December
 - November
 - October
 - September
 - Abortable fetch
 - WebVR changes in Chrome 62
 - An event for CSS position:sticky
 - Sensors For The Web!
 - Deprecations and Removals in Chrome 62
 - Autoplay Policy Changes**
 - Audio/Video Updates in Chrome 62
 - Picture In Picture (PiP)
 - Introducing the Web Share API
 - New in Chrome 61
 - Introducing visualViewport
 - August
 - July
 - June
 - May
 - April
 - March
 - February
 - January
- Web Updates (2016)
- Web Updates (2015)
- Web Updates (2014)
- Web Updates (2013)
- Web Updates (2012)
- Web Updates (2011)

Autoplay Policy Changes



★ **Note:** The Autoplay Policy launched in M66 Stable for audio and video elements and is effectively blocking roughly half of unwanted media autoplays in Chrome. For the Web Audio API, the autoplay policy will launch in M71. This affects web games, some WebRTC applications, and other web pages using audio features. Developers will need to update their code to take advantage of the policy. More details can be found in the [Web Audio API section](#) below.

 **By François Beaufort**
Dives into Chromium source code

Chrome's autoplay policies will change in April of 2018 and I'm here to tell you why and how this is going to affect video playback with sound. Spoiler alert: users are going to love it!

- Contents
- New behaviors
 - Media Engagement Index (MEI)
 - Developer switches
 - Iframe delegation
 - Example scenarios
 - Chrome enterprise policies
 - Best practices for web developers
 - Audio/Video elements
 - Web Audio

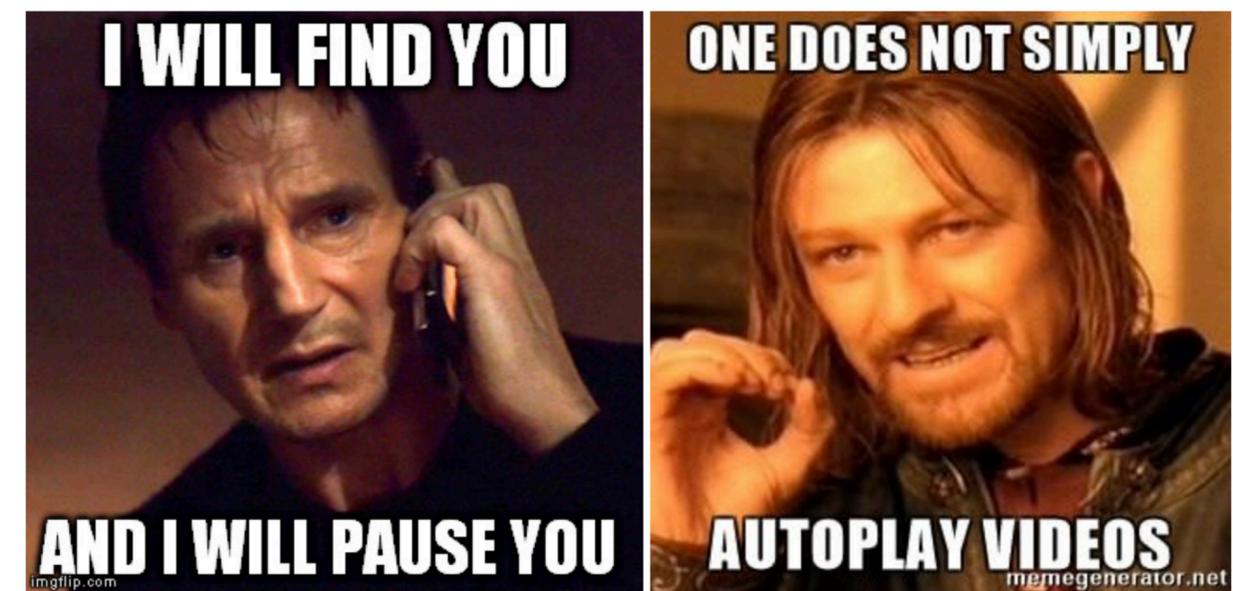


Figure 1. Internet memes tagged "autoplay" found on [Imgflip](#) and [Imgur](#)

New behaviors



Dđān'ntēn'tlēr



@Viss

Follow



so [hax.lol](#) doesnt autoplay the goat simulator theme anymore because of a recent chrome change.

but there are plenty of other sites that still autoplay somehow.

anyone intersted in helping me reanimate [hax.lol](#)? :D

11:48 PM - 20 Sep 2018

2 Retweets 6 Likes



4



2



6



ОТЛОЖЕНО

Апрель → Октябрь 2018

Браузер из будущего
МОЖЕТ СЛОМАТЬ
идеально оттестированный
на сегодня сайт

90% шанс что ваш JS-сайт
не запустится через 5 лет

— Нужно бежать со всех ног,
чтобы только оставаться на месте...



Все невероятно сложно

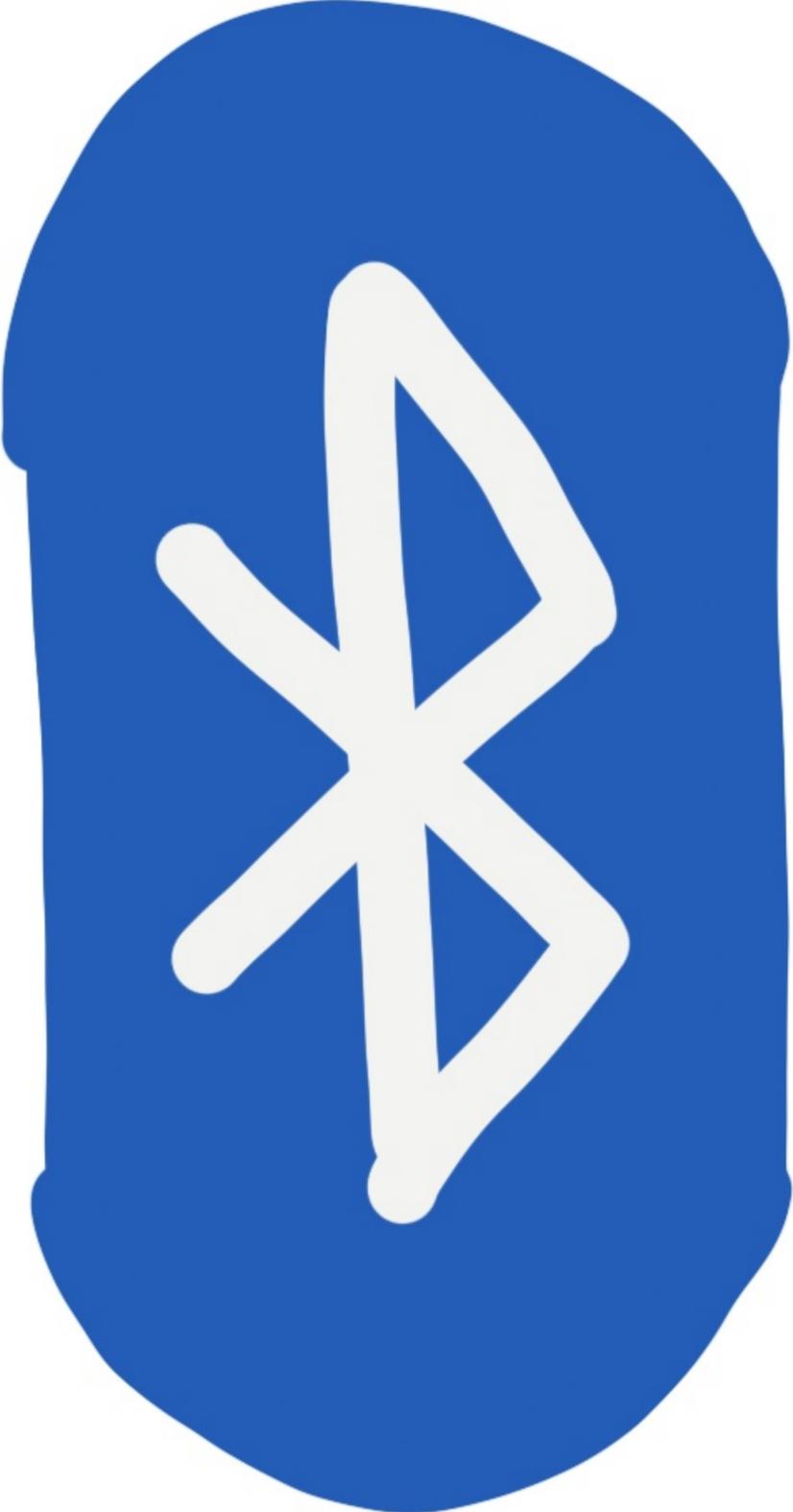




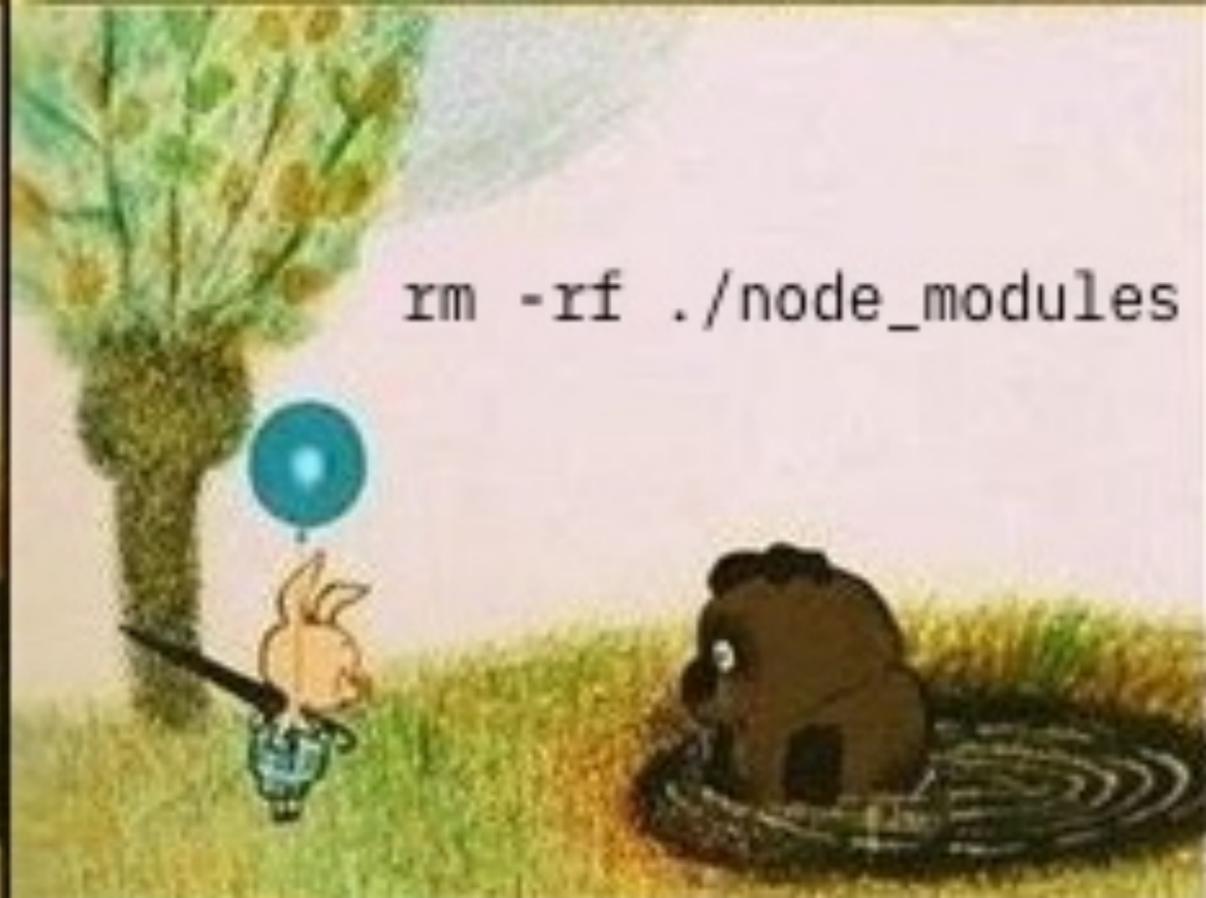
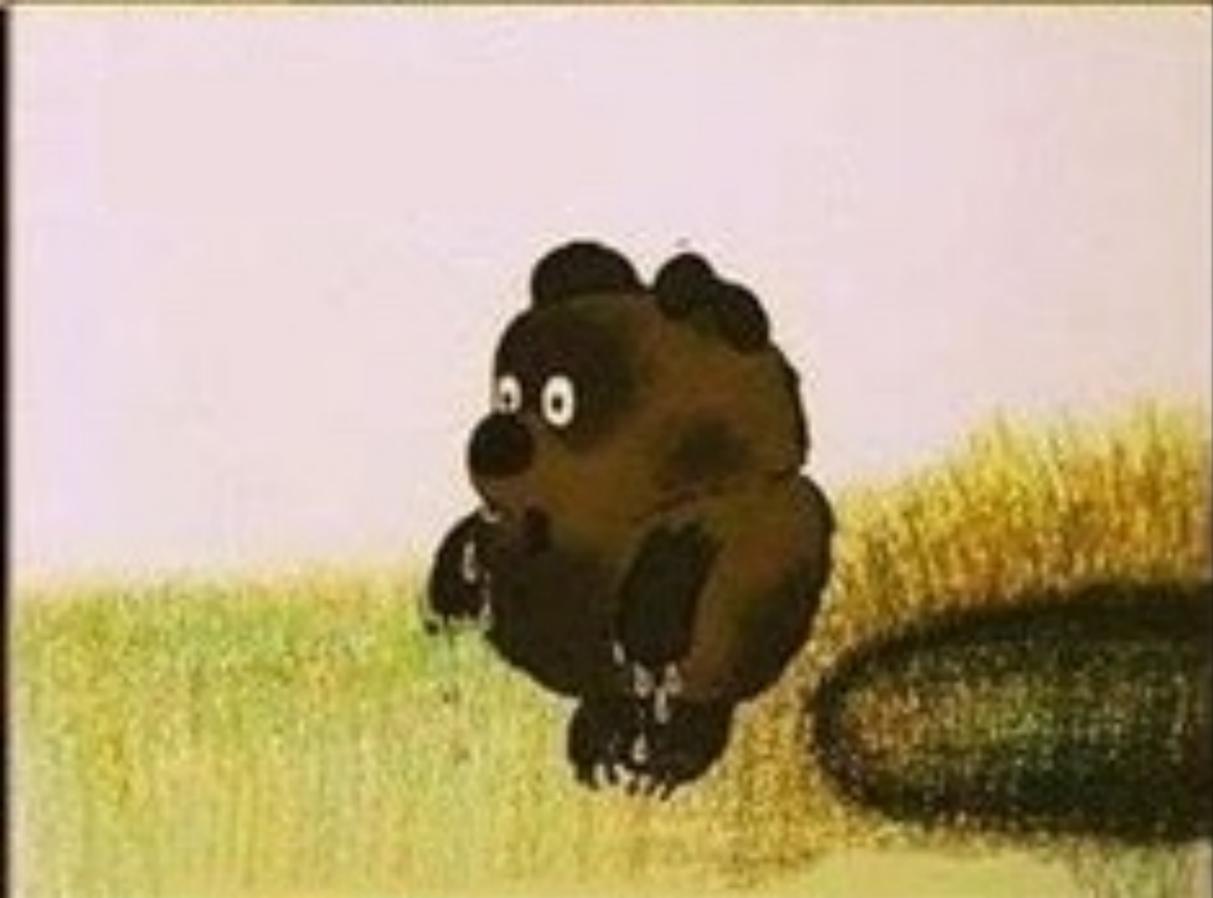
plz connect

**Bluetooth
headphones**

Macbook



Всё еде работает

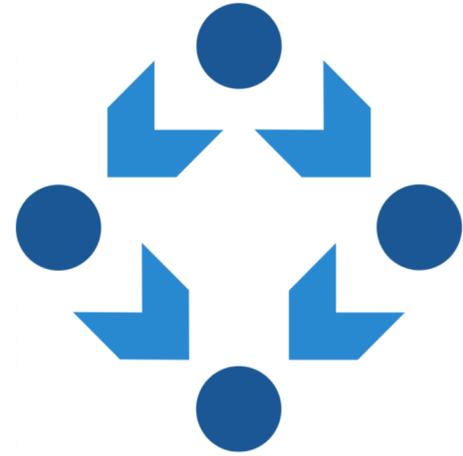


```
rm -rf ./node_modules
```



```
npm install
```





Reproducible Builds



Search Gems...

unicorn-worker-killer 0.4.4

Kill unicorn workers by memory and request counts

VERSIONS:

- 0.4.4 - November 13, 2015 (9 KB)
- 0.4.3 - December 23, 2014 (9 KB)
- 0.4.2 - September 23, 2013 (9.5 KB)
- 0.4.1 - March 15, 2013 (8 KB)
- 0.3.6 - March 09, 2013 (9 KB)

Show all versions (17 total) →

RUNTIME DEPENDENCIES (2):

- get_process_mem ~> 0
- unicorn < 6, >= 4

DEVELOPMENT DEPENDENCIES (1):

- rake >= 0.9.2

AUTHORS:

Kazuki Ohta, Sadayuki Furuhashi, Jonathan Clem

OWNERS:



Star 827

TOTAL DOWNLOADS
5,916,575

FOR THIS VERSION
3,967,171

GEMFILE:

```
gem 'unicorn-worker-killer'
```

INSTALL:

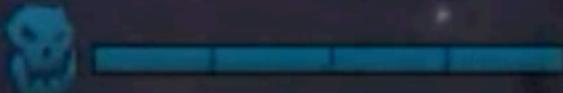
```
gem install unicorn-worker-killer
```

LICENSES:

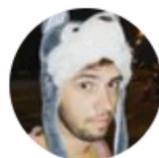
GPLV2+, RUBY 1.8

REQUIRED RUBY VERSION:

WAAA
AAAA
AAGHH!



Решения неадекватны
проблеме



Nikita

@nikitonsky

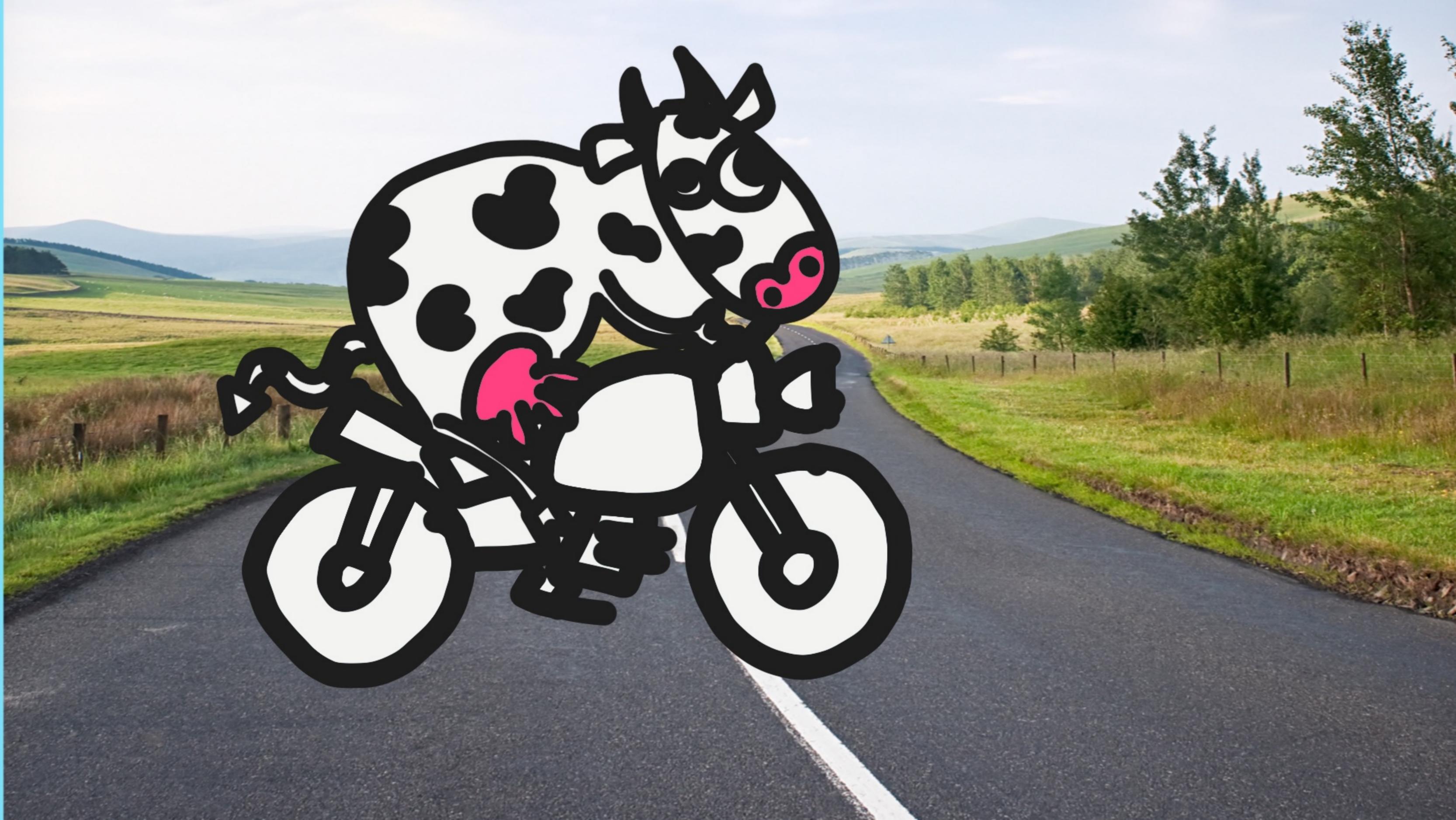


> You've got a markup language designed for sharing the abstract of physics papers, a programming language designed in four weeks, and you've got, as you say, a layout mechanism designed by people who were used to newspapers, so you're fucked from three different directions!

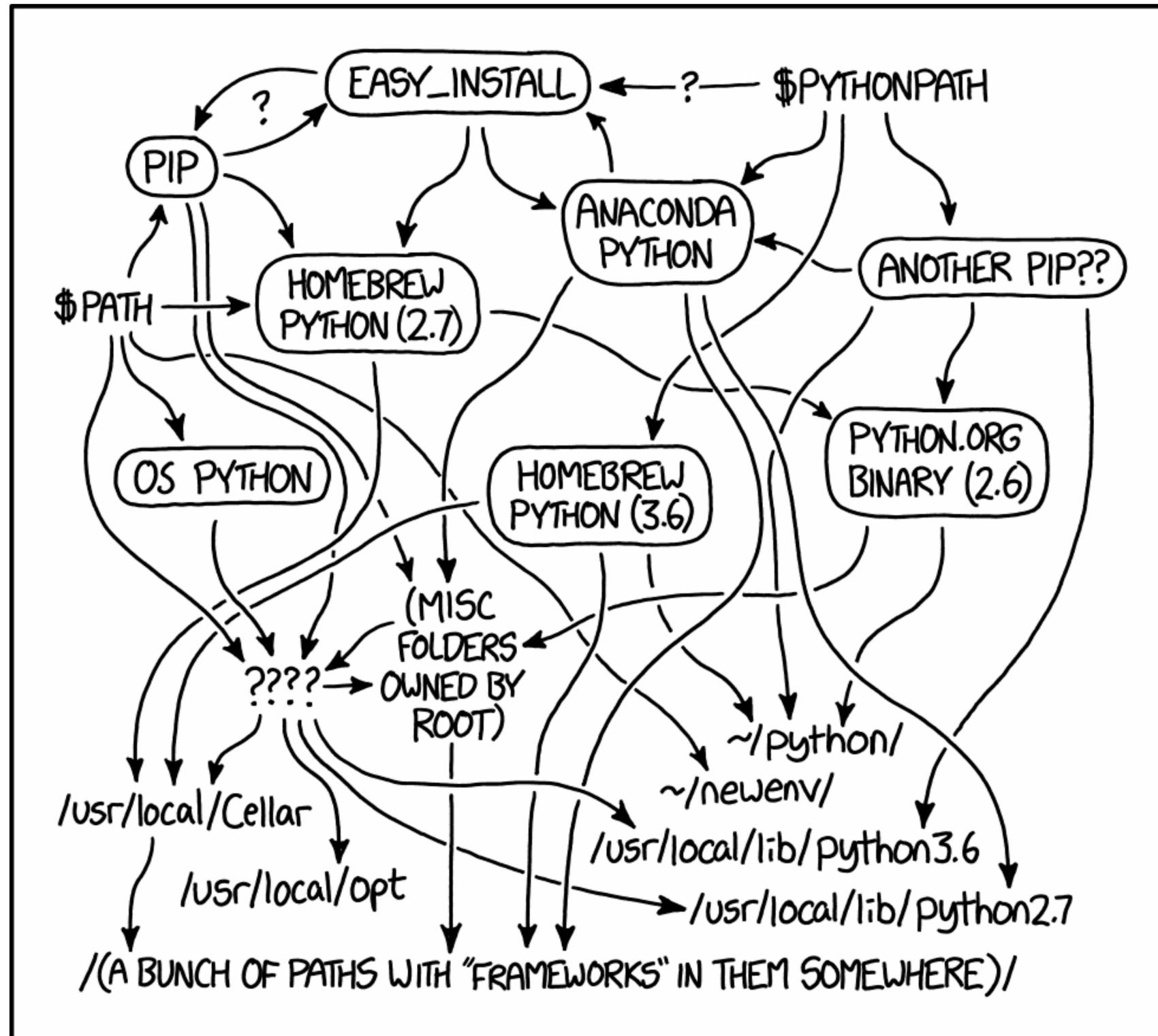
4:02 AM - 26 Sep 2018

7 Retweets 37 Likes

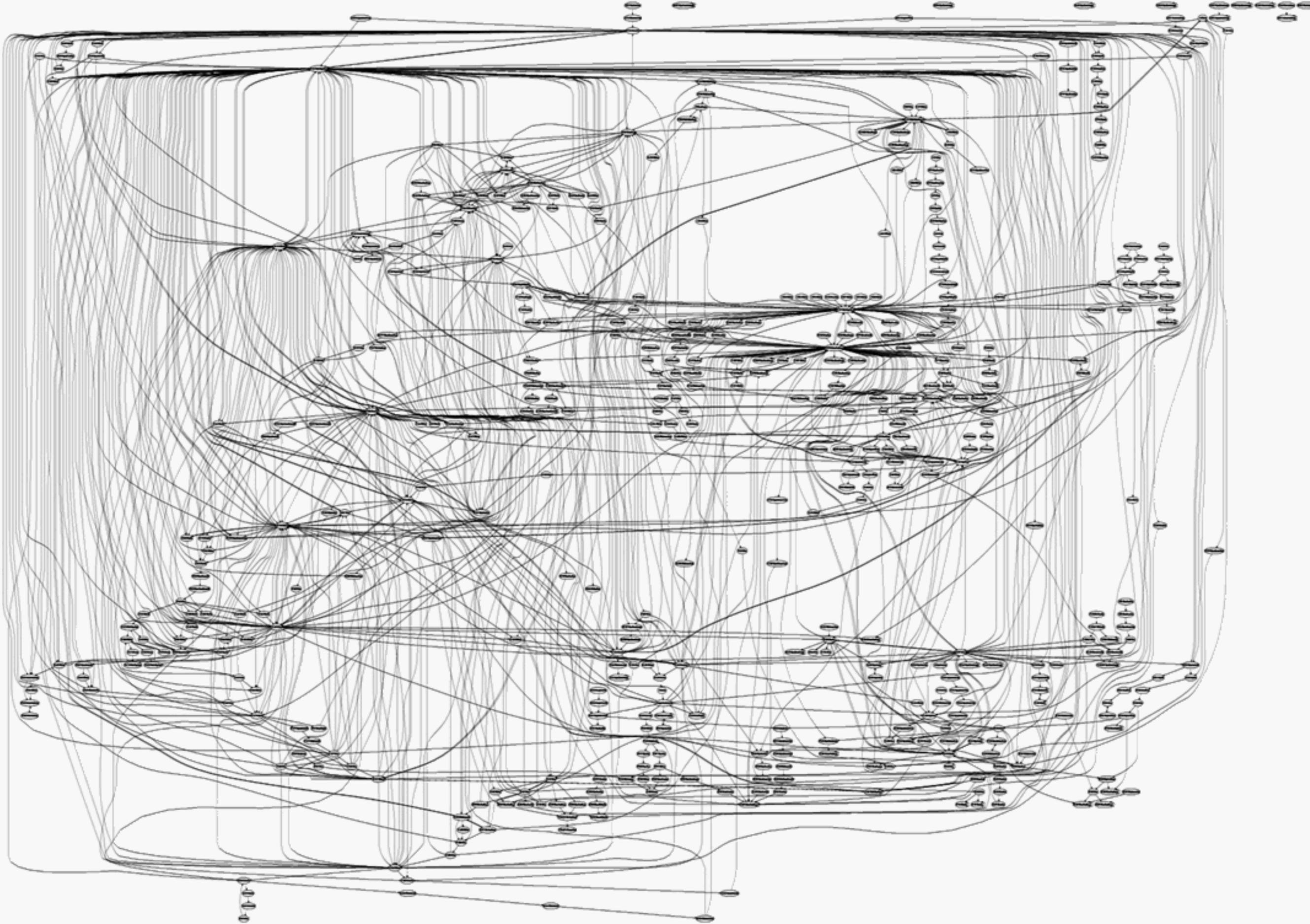




Переупаковка вместо починки



MY PYTHON ENVIRONMENT HAS BECOME SO DEGRADED THAT MY LAPTOP HAS BEEN DECLARED A SUPERFUND SITE.

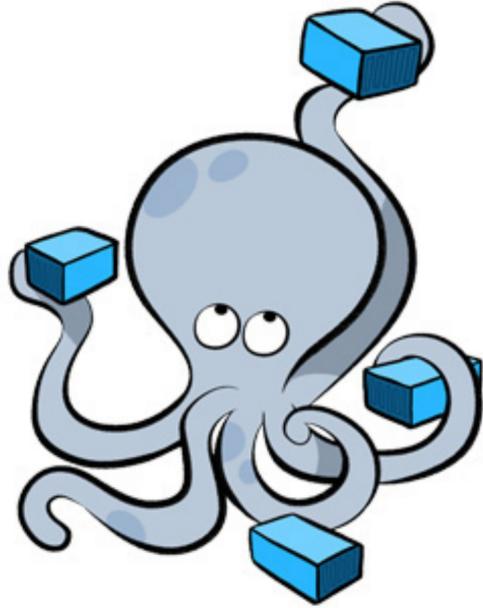














Syed Aqueel Haider
@sahrizv

Follow



2014 - We must adopt [#microservices](#) to solve all problems with monoliths
2016 - We must adopt [#docker](#) to solve all problems with microservices
2018 - We must adopt [#kubernetes](#) to solve all problems with docker



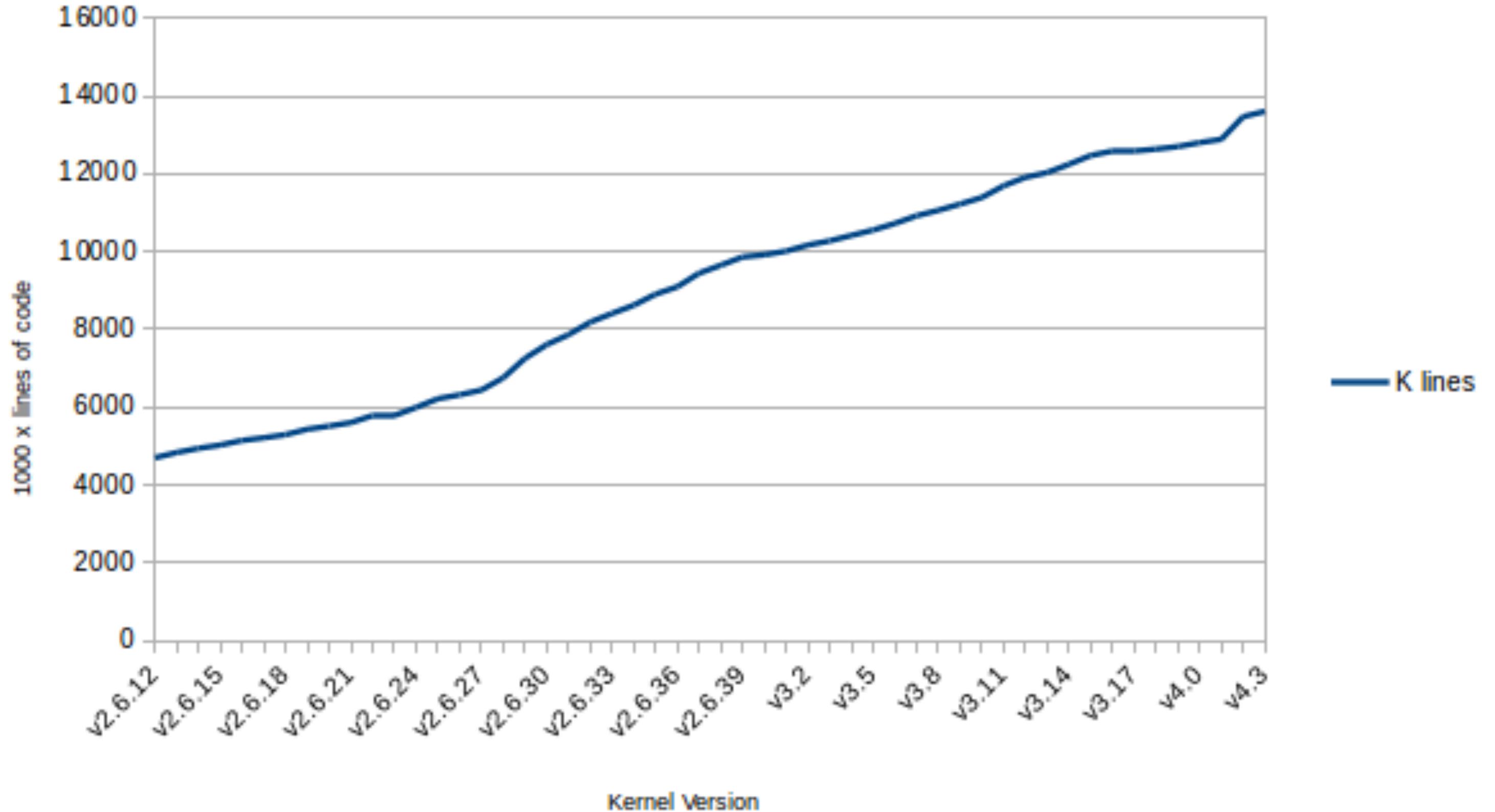
12:25 AM - 15 Jul 2018

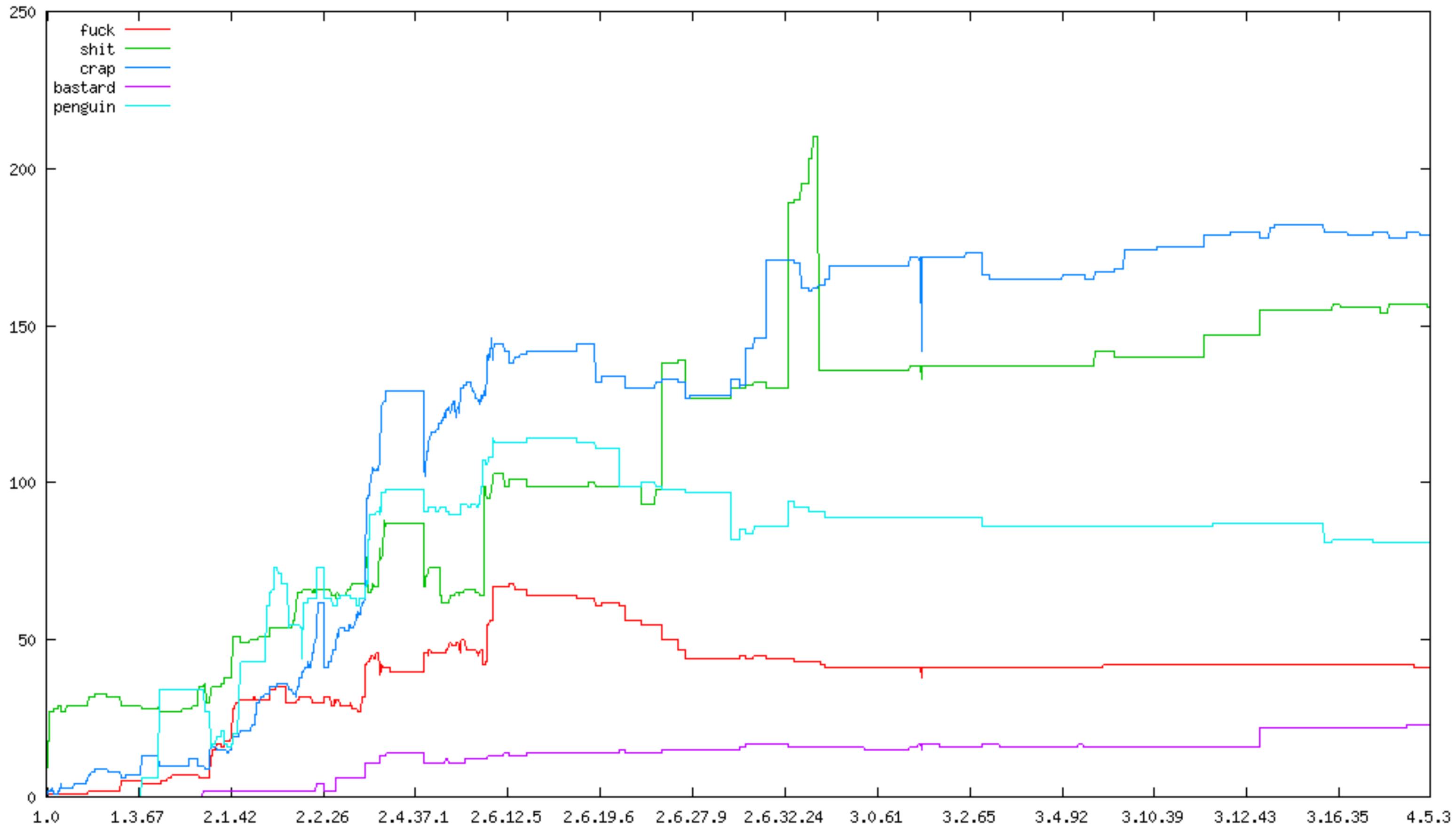
1,743 Retweets 2,394 Likes



Мы застряли

1000s of Lines of C in Linux Kernel







The Complexity Challenge

787 Dreamliner



6.5M Million
Lines of Code

S-Class Mercedes



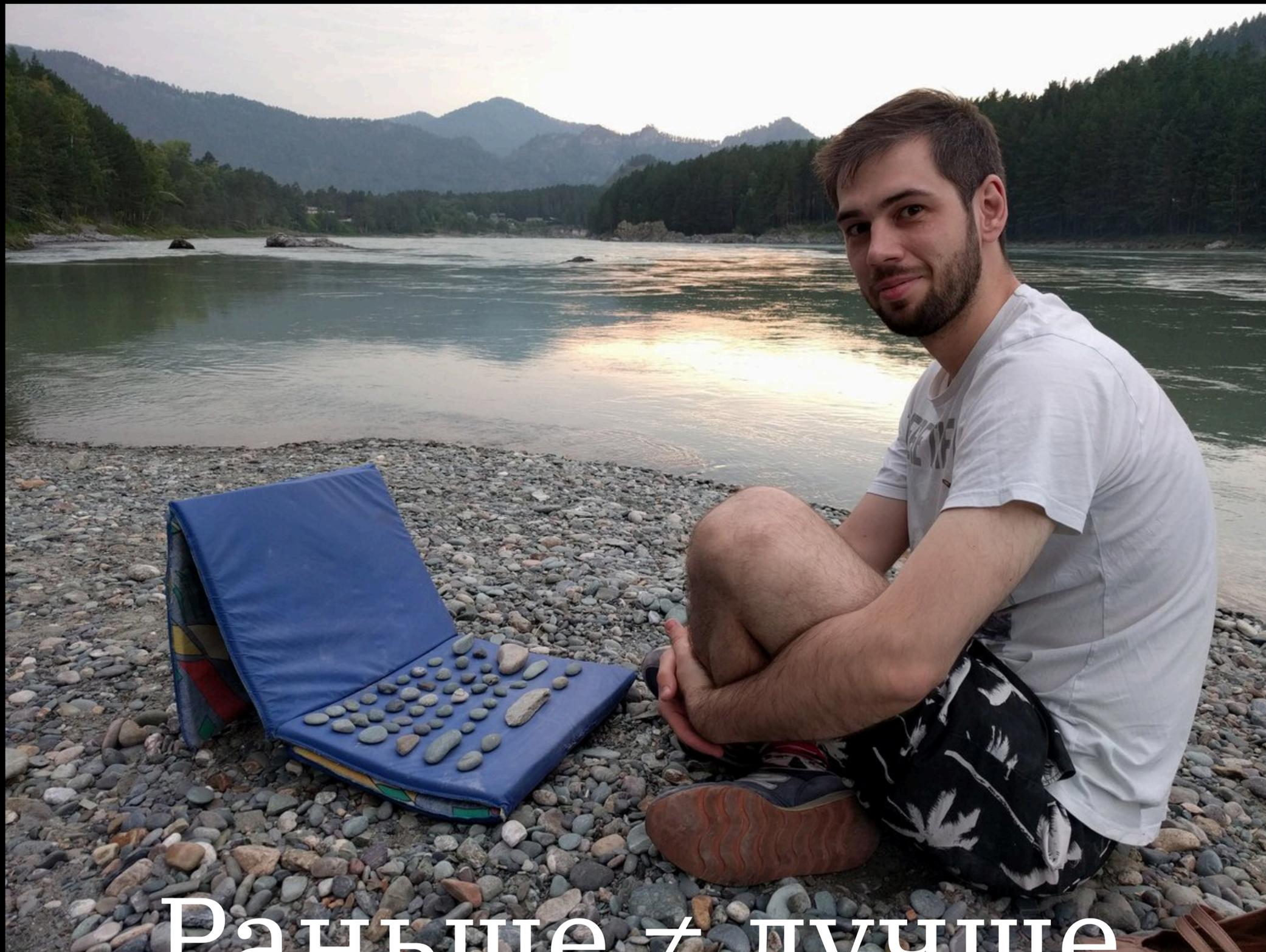
100 Million
Lines of Code
100 ECUs
5 Networks
2 miles of cable
10+ Operating Systems
50% of total cost

F22 Raptor



1.7 Million
Lines of Code

Что делать?



Раньше ≠ лучше

1995 A Plea for Lean Software

Niklaus Wirth
ETH Zürich

Memory requirements of today's workstations typically jump substantially—from several to many megabytes—whenever there's a new software release. When demand surpasses capacity, it's time to buy add-on memory. When the system has no more extensibility, it's time to buy a new, more powerful workstation. Do increased performance and functionality keep pace with the increased demand for resources? Mostly the answer is no.

About 25 years ago, an interactive text editor could be designed with as little as 8,000 bytes of storage. (Modern program editors request 100 times that much!) An operating system had to manage with 8,000 bytes, and a compiler had to fit into 32 Kbytes, whereas their modern descendants require megabytes. Has all this inflated software become any faster? On the contrary. Were it not for a thousand times faster hardware, modern software would be utterly unusable.

Enhanced user convenience and functionality supposedly justify the increased size of software, but a closer look reveals these justifications to be shaky. A text editor still performs the reasonably simple task of inserting, deleting, and moving parts of text; a compiler still translates text into executable code; and an operating system still manages memory, disk space, and processor cycles. These basic obligations have not changed with the advent of windows, cut-and-paste strategies, and pop-up menus, nor with the replacement of meaningful command words by pretty icons.

The apparent software explosion is accepted largely because of the staggering progress made by semiconductor technology, which has improved the price/performance ratio to a degree unparalleled by any other branches of technology. For example, from 1978 to 1993 Intel's 80x86 family of processors increased power by a factor of 335, transistor density by a factor of 107, and price by a factor of about 3. The prospects for continuous performance increase are still solid, and there is no sign that software's ravenous appetite will be appeased anytime soon.¹ This development has spawned numerous rules, laws, and corollaries, which are—as is customary in such cases—expressed in general terms; thus they are neither provable nor refutable. With a touch of humor, the following two laws reflect the state of the art admirably well:

- Software expands to fill the available memory. (Parkinson)
- Software is getting slower more rapidly than hardware becomes faster. (Reiser)

Uncontrolled software growth has also been accepted because customers have trouble distinguishing between essential features and those that are just "nice to have." Examples of the latter class: those arbitrarily overlapping windows suggested by the uncritically but widely adopted

Software's girth has surpassed its functionality, largely because hardware advances make this possible. The way to streamline software lies in disciplined methodologies and a return to the essentials.

Бизнесу пофиг

Пользователям пофиг

ENGINEERS

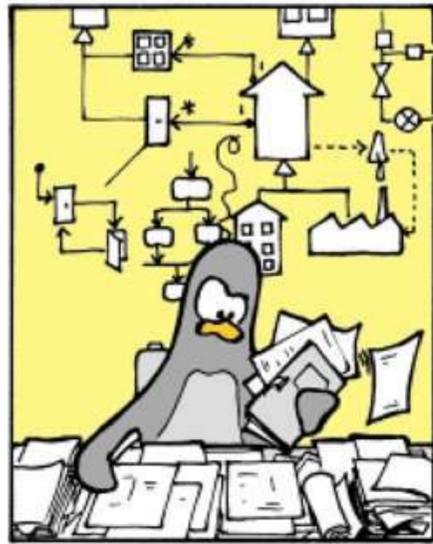


UNITE

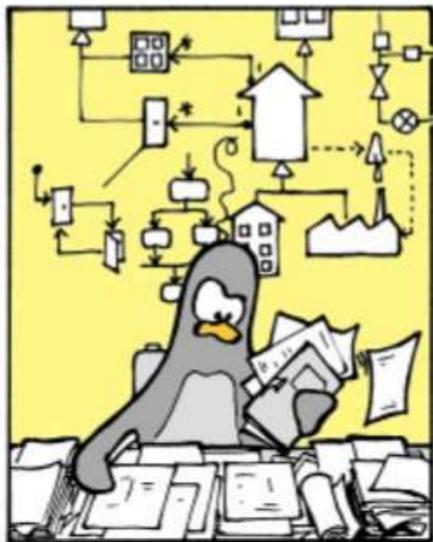
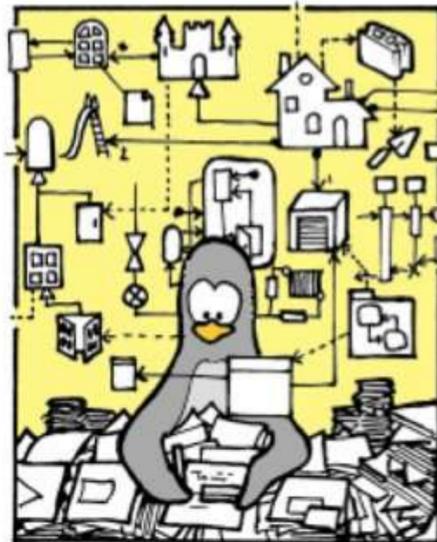
SEPARATELY
IN YOUR OWN HOMES

The Design Process

STEP ONE



STEP TWO



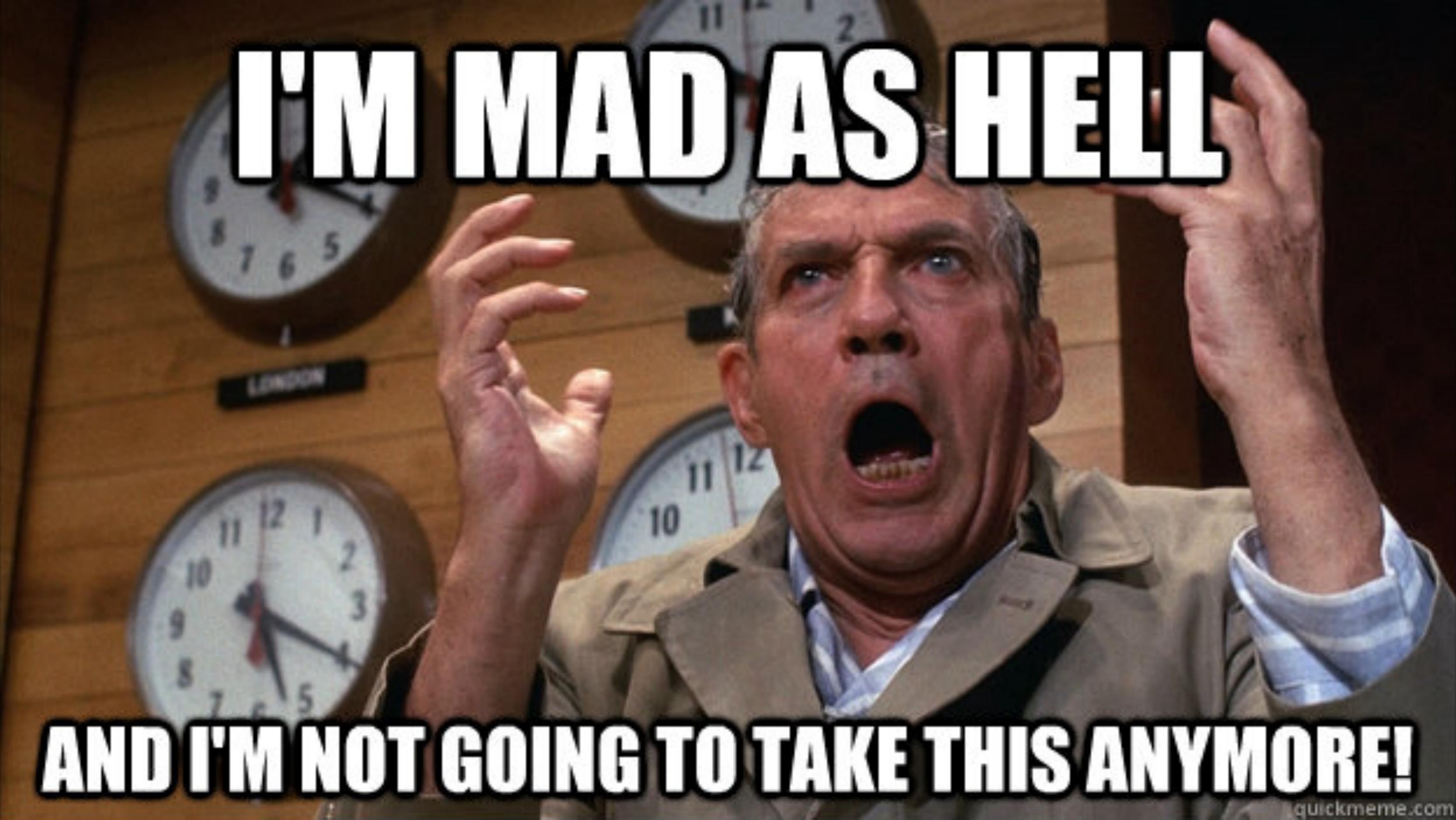




**We parse 33kLOC in
16ms**

≈ 2mLOC/s.

Манифест нормального инженера

A man in a tan trench coat is shown from the chest up, shouting with his mouth wide open and his hands raised in a gesture of frustration or anger. He is in a room with a wood-paneled wall covered in several round wall clocks. One clock has a small sign below it that says "LONDON". The overall scene conveys a sense of intense stress or rage.

I'M MAD AS HELL

AND I'M NOT GOING TO TAKE THIS ANYMORE!

Переживайте

Принимайте на свой счет

Берите ответственность

Разбирайтесь,
докапывайтесь

Решайте проблемы до конца

**АКТИВНО боритесь с
раздуванием, неэффективностью**

**Экономьте ресурсы.
Даже если они есть**

Выбирайте решения,
соразмерные проблеме

**Заглядывайте
в черные ящики**

Меряйте характеристики и
считайте пределы

WHAT TO DO WITH 8 GB

We used most of 4.5 GB available

- Loaded Data - 2.5 GB
- Flexbile Mem - 0.5 GB
- Atlases + Buffers - 370 MB
- Render Targets - 290 MB
- Movie - 270 MB
- Command Buffers - 115 MB
- Fixed - 100 MB
- Heap - 100 MB
- Non-Ship Max - 350



Исправляйте и переделывайте,
а не добавляйте

**Двигайте вперед глобально,
а не вбок локально**

То, что хорошо сегодня,
губительно через 5/10/50 лет

Популярное \neq лучшее

Стандартное \neq лучшее

Гордиться

Быстрые

Легкие

Надежные

Простые



Медленные

Тяжелые

Ломкие

Сложные



F

I

N