Aggressive Web Site **Optimization** 2016Q1

SCRIPTY#5 2016/3/17

Jxck

- id: Jxck
- github: Jxck
- twitter: @jxck_
- blog: https://blog.jxck.io
- podcast: http://mozaic.fm
- Love: music

Jack

I don’t talk about

Performance

but

Optimization

as

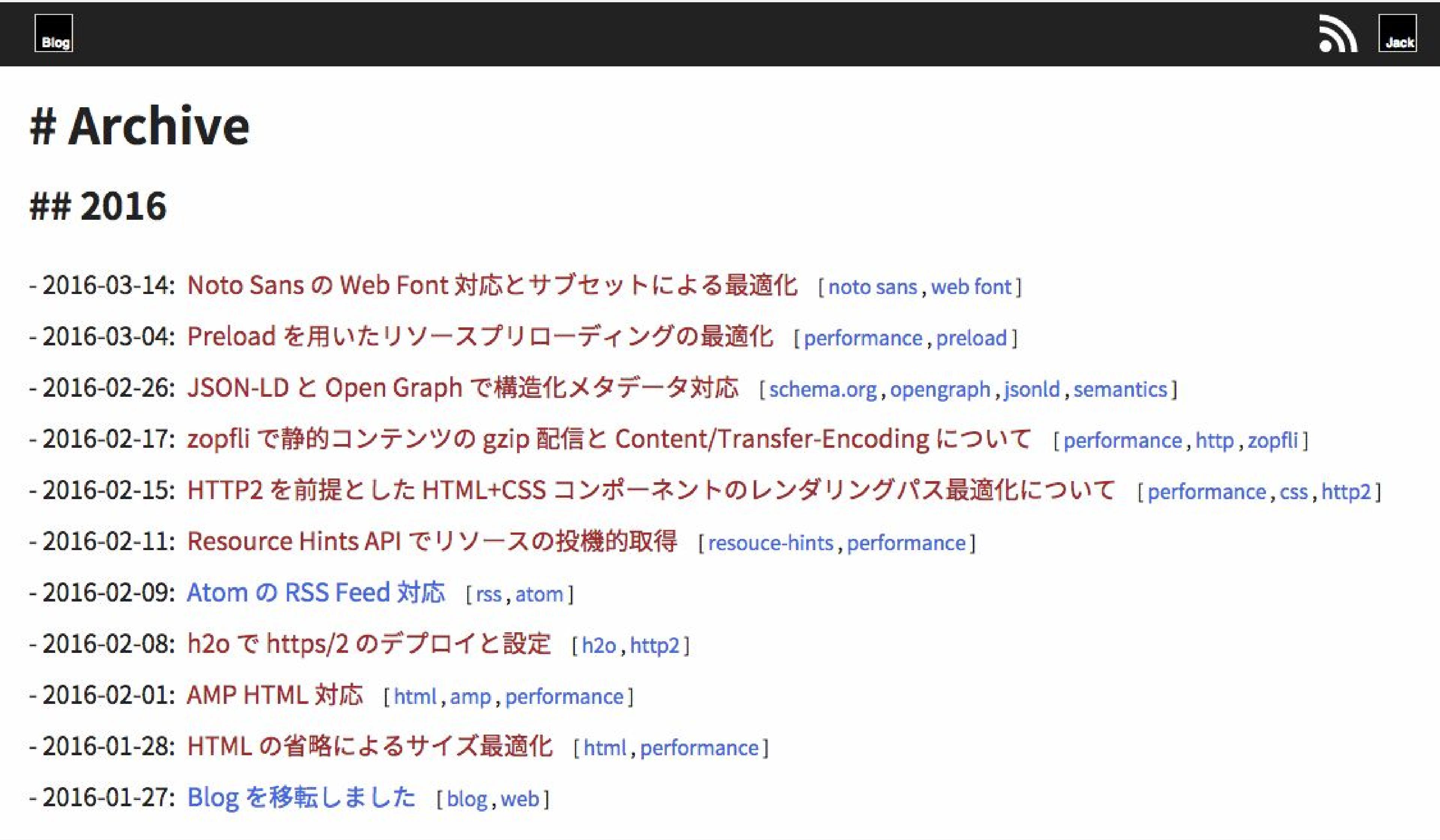
Hobby

so

Measure yourself

thanks

Current target blog.jxck.io



Archive

2016

- 2016-03-14: Noto Sans の Web Font 対応とサブセットによる最適化 [noto sans , web font]
- 2016-03-04: Preload を用いたリソースプリローディングの最適化 [performance , preload]
- 2016-02-26: JSON-LD と Open Graph で構造化メタデータ対応 [schema.org , opengraph , jsonld , semantics]
- 2016-02-17: zopfli で静的コンテンツの gzip 配信と Content/Transfer-Encoding について [performance , http , zopfli]
- 2016-02-15: HTTP2 を前提とした HTML+CSS コンポーネントのレンダリングパス最適化について [performance , css , http2]
- 2016-02-11: Resource Hints API でリソースの投機的取得 [resouce-hints , performance]
- 2016-02-09: Atom の RSS Feed 対応 [rss , atom]
- 2016-02-08: h2o で https/2 のデプロイと設定 [h2o , http2]
- 2016-02-01: AMP HTML 対応 [html , amp , performance]
- 2016-01-28: HTML の省略によるサイズ最適化 [html , performance]
- 2016-01-27: Blog を移転しました [blog , web]

Reduce Your Resource Size

HTML

JS

CSS

Font

JPEG

PNG

WebP

SVG

JS

Optimize JS

- You already how to do that.
- Just Do It.

CSS

Optimize CSS

- Just Do It.

HTML

Optimize HTML

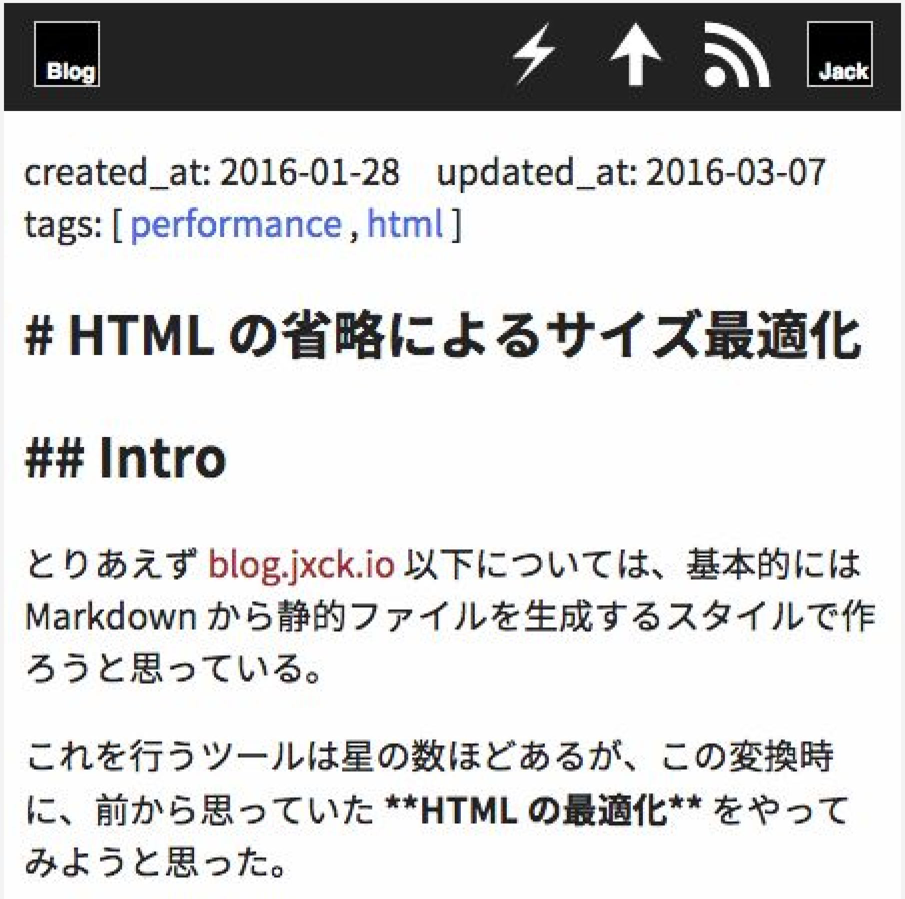
```
<!DOCTYPE html>
<html>
  <head>
    <meta charset="UTF-8">
    <title>sample</title>
  </head>
  <body>
    <p>this is list</p>
    <ul>
      <li>one</li>
      <li>two</li>
      <li>three</li>
    </ul>
  </body>
</html>
```

224byte

```
<!DOCTYPE html>
<html>
  <head>
    <meta charset="UTF-8">
    <title>sample</title>
  </head>
  <body>
    <p>this is list</p>
    <ul>
      <li>one</li>
      <li>two</li>
      <li>three</li>
    </ul>
  </body>
</html>
```

removable

Optimize HTML



created_at: 2016-01-28 updated_at: 2016-03-07
tags: [performance , html]

HTML の省略によるサイズ最適化

Intro

とりあえず blog.jxck.io 以下については、基本的には Markdown から静的ファイルを生成するスタイルで作ろうと思っている。

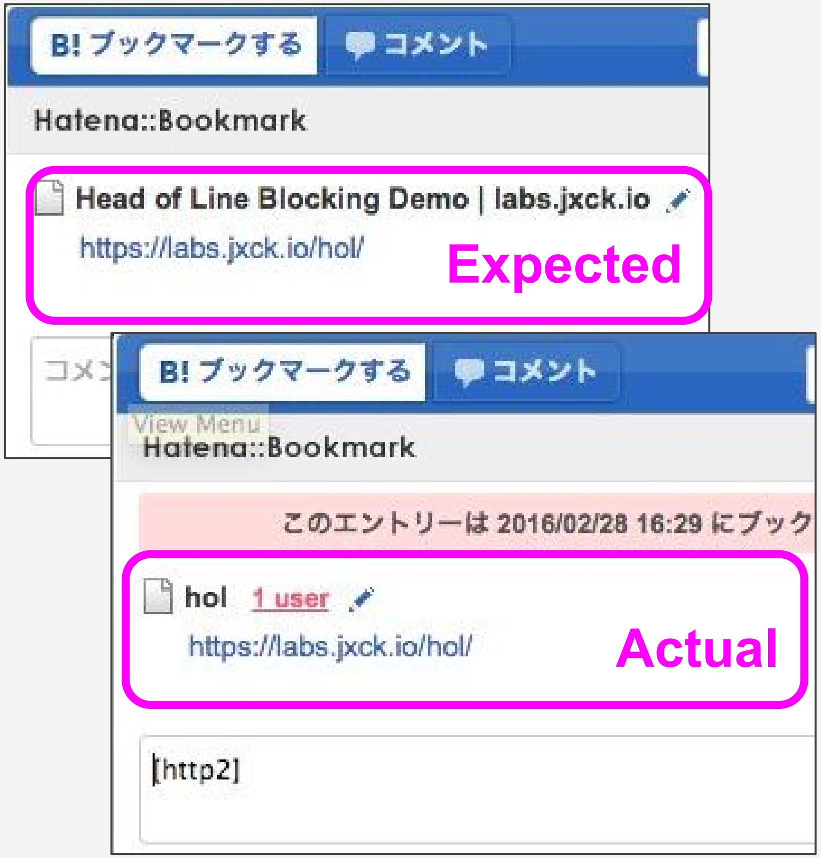
これを行うツールは星の数ほどあるが、この変換時に、前から思っていた **HTML の最適化** をやってみようと思った。

```html
<!DOCTYPE html>
<meta charset=UTF-8>
<title>sample</title>
<p>this is list
<ul>
  <li>one
  <li>two
  <li>three
</ul>
```

224byte -> 118byte

Hatena Parser Problem

Failed To Get Title



Hatena::Bookmark

Head of Line Blocking Demo | labs.jxck.io

https://labs.jxck.io/hol/

Expected

コメン

Hatena::Bookmark

このエントリーは 2016/02/28 16:29 にブック

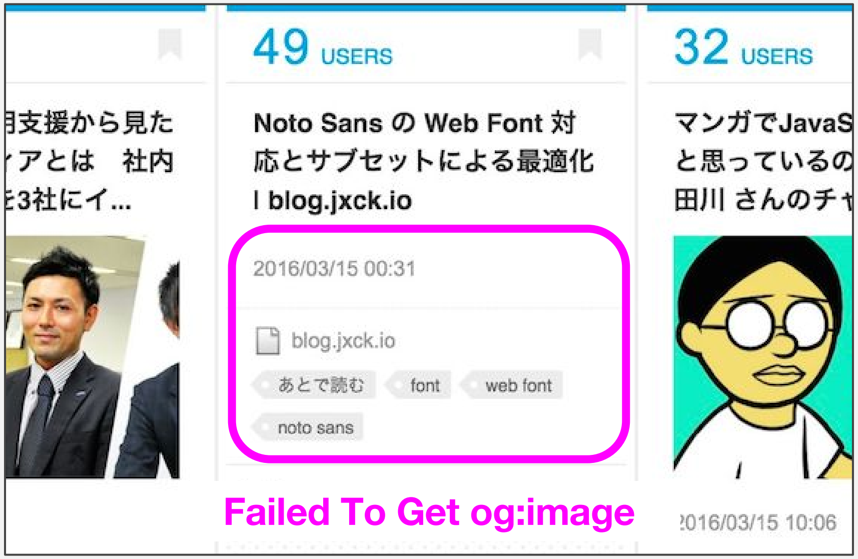
hol 1 user

https://labs.jxck.io/hol/

Actual

[http2]

Failed To Get og:image



支援から見た
アとは　社内
3社にイ…

49 USERS

Noto Sans の Web Font 対応とサブセットによる最適化 | blog.jxck.io

2016/03/15 00:31

blog.jxck.io

Failed To Get og:image

32 USERS

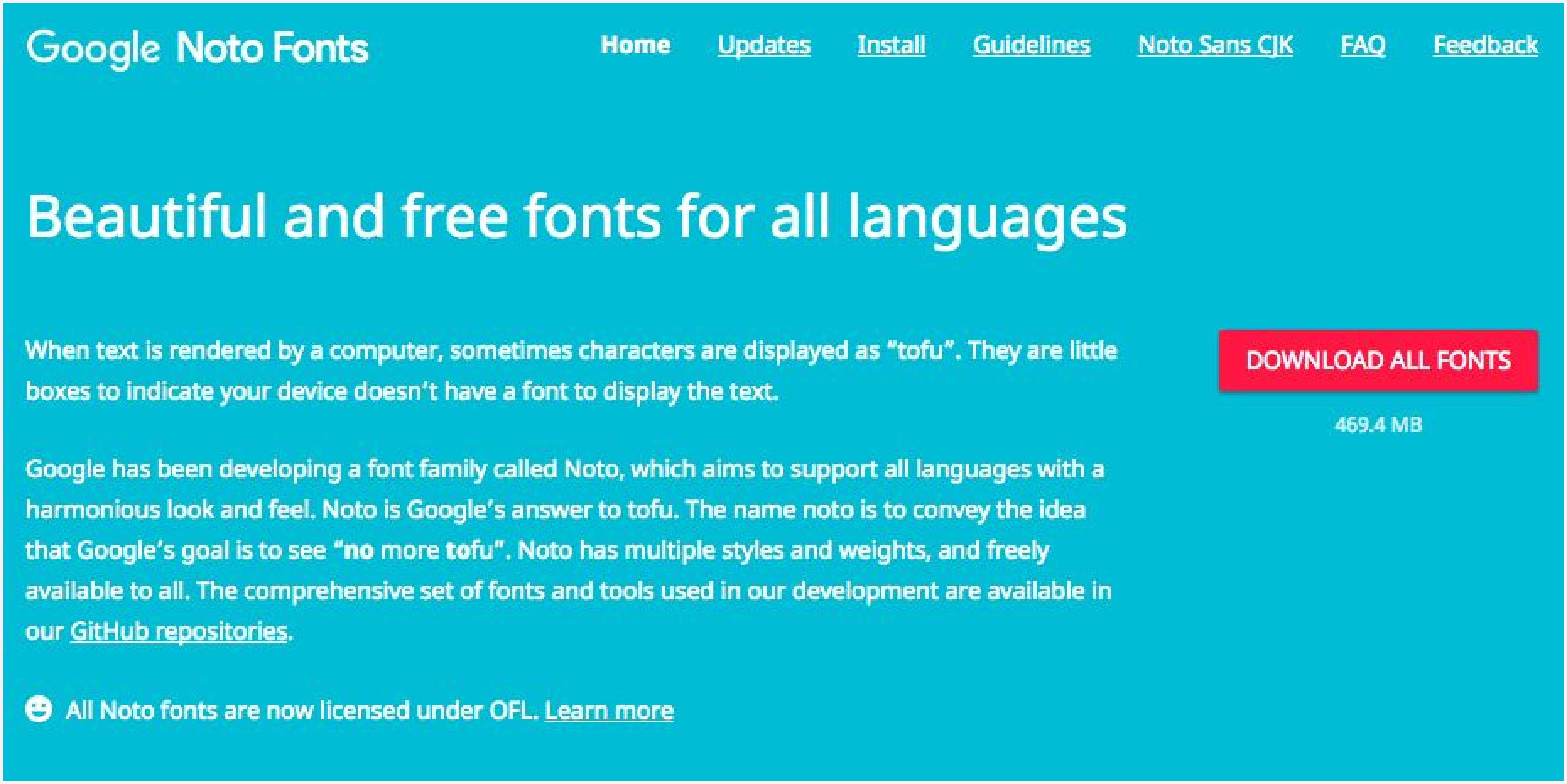
マンガでJavaS
と思っているの
田川 さんのチャ

016/03/15 10:06

Hatena GANBARE !!

Web Font

Noto Fonts



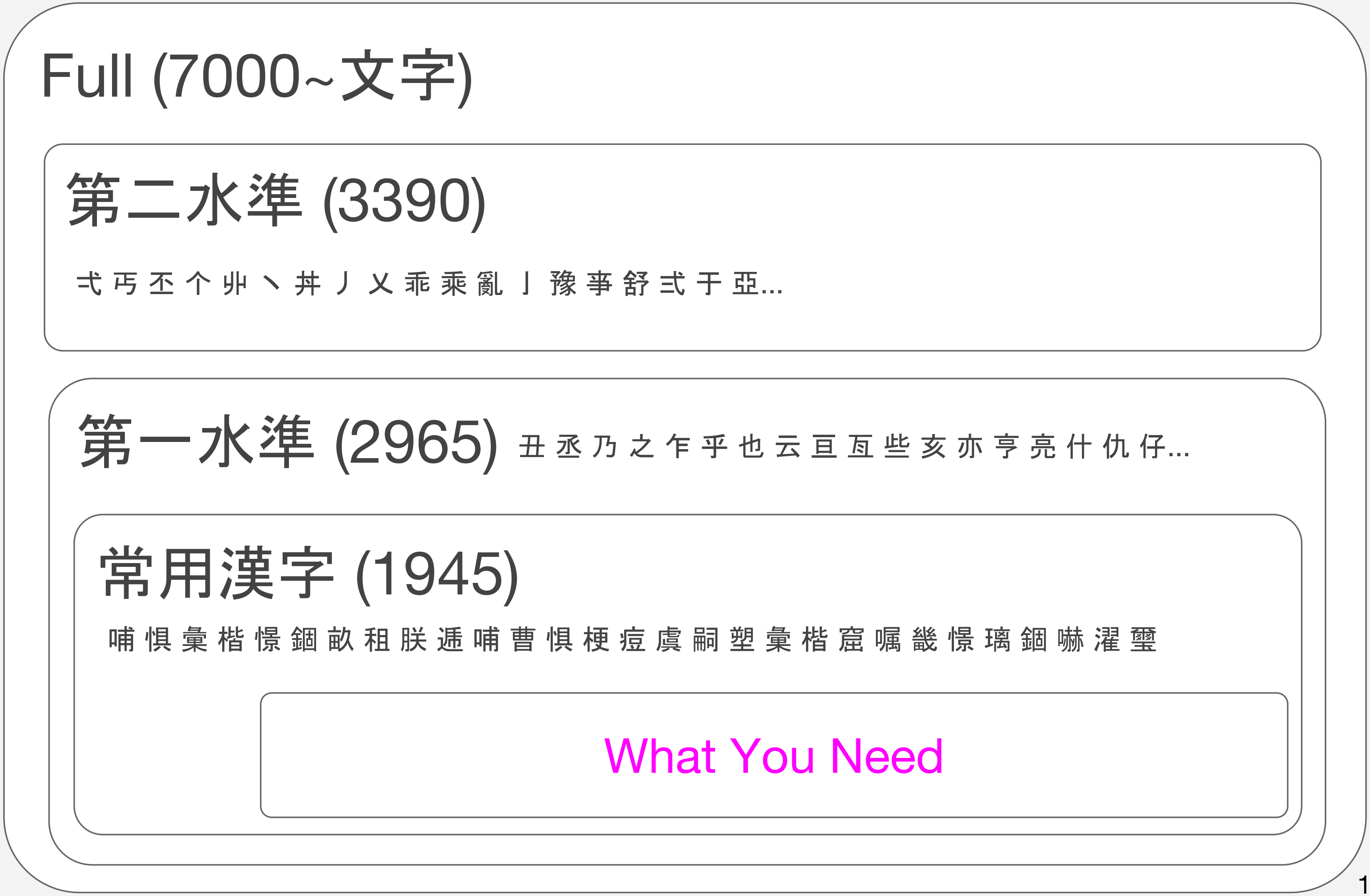
Beautiful and free fonts for all languages

When text is rendered by a computer, sometimes characters are displayed as “tofu”. They are little boxes to indicate your device doesn’t have a font to display the text.

Google has been developing a font family called Noto, which aims to support all languages with a harmonious look and feel. Noto is Google’s answer to tofu. The name noto is to convey the idea that Google’s goal is to see “**no** more **tofu**”. Noto has multiple styles and weights, and freely available to all. The comprehensive set of fonts and tools used in our development are available in our GitHub repositories.

☻ All Noto fonts are now licensed under OFL. Learn more

Noto Sans JCK



Full (7000~文字)

第二水準 (3390)

弌 丐 丕 个 丱 丶 丼 丿 乂 乖 乘 亂 亅 豫 亊 舒 弍 于 亞...

第一水準 (2965) 丑 丞 乃 之 乍 乎 也 云 亘 亙 些 亥 亦 亨 亮 什 仇 仔...

常用漢字 (1945)

哺 惧 彙 楷 憬 錮 畝 租 朕 逓 哺 曹 惧 梗 痘 虞 嗣 塑 彙 楷 窟 嘱 畿 憬 璃 錮 嚇 濯 璽

What You Need

Subset for Tech Blog

範囲	文字数
基本ラテン文字	94
CJK記号と句読点	10
ひらがな	81
カタカナ	83
半角形と全角形	0
常用漢字	2136
不要文字	-23
合計	2381

574.5KB -> 357.8KB

PNG

PNG

- Resize
- Remove Meta Data
- Reduce Color
- Just Do It

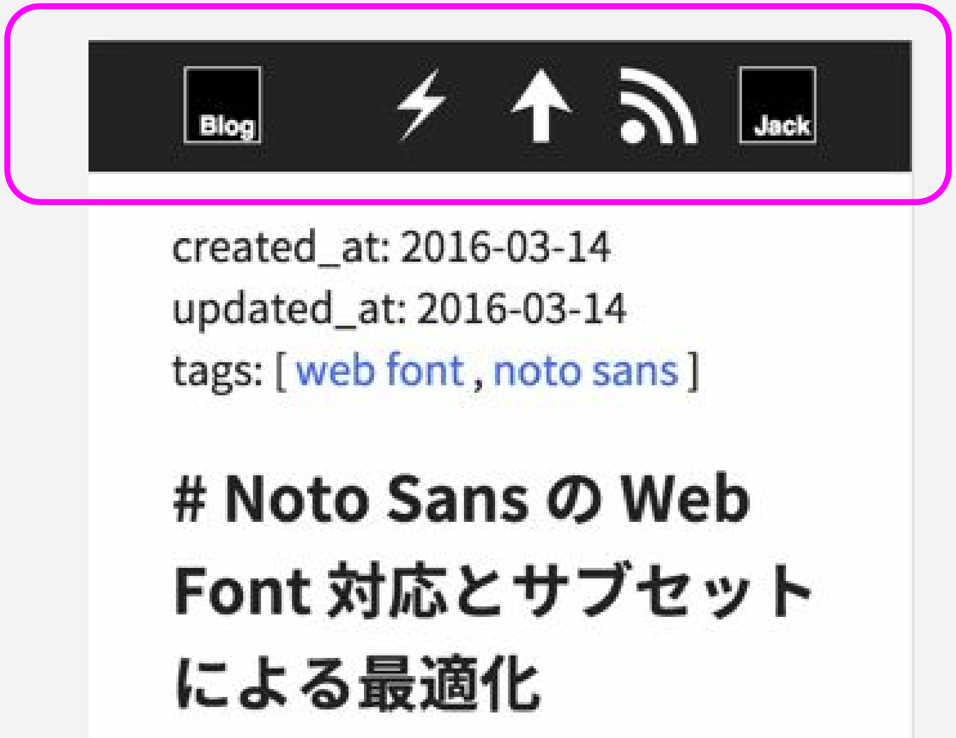
JPEG

JPEG

- ry

SVG

SVG for UI ICON



created_at: 2016-03-14
updated_at: 2016-03-14
tags: [web font , noto sans]

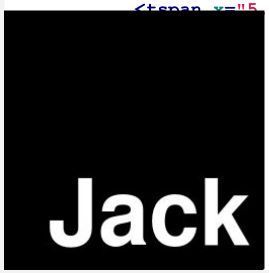
Noto Sans の Web Font 対応とサブセットによる最適化

SVG Gallary: http://labs.jxck.io/svg

404 page: http://jxck.io/notfound

SVGGo

```
<?xml version="1.0" encoding="utf-8"?>
<svg contentScriptType="text/ecmascript"
     xmlns:xlink="http://www.w3.org/1999/xlink"
     zoomAndPan="magnify"
     contentStyleType="text/css"
     viewBox="-15.0 -15.0 286.0 286.0"
     xmlns:cacoo="http://cacoo.com/"
     preserveAspectRatio="xMidYMin meet"
     xmlns="http://www.w3.org/2000/svg"
     version="1.1">
  <g>
    <g transform="translate(0.0 0.0)">
      <g transform="translate(0.0 0.0)">
        <path fill="#000000" fill-opacity="1.0" d="M256.0 256.0 L0.0 256.0
L0.0 0.0 L256.0 0.0 L256.0 256.0z" stroke="none"/>
        <g transform="translate(1.0 1.0)">
          <defs>
            <clipPath id="id0">
              <path d="M0 0 L254.0 0 L254.0 254.0 L0 254.0z"/>
            </clipPath>
          </defs>
          <text font-size="90" clip-path="url(#id0)" text-decoration="none"
fill="#ffffff" font-family="Helvetica" font-style="normal" font-weight="
bold"/>
        </g>
      </g>
      <g transform="translate(39.0 155.0)">
        <defs>
          <clipPath id="id1">
            <path d="M0 0 L210.0 0 L210.0 95.0 L0 95.0z"/>
          </clipPath>
        </defs>
        <text font-size="90" clip-path="url(#id1)" text-decoration="none"
fill="#ffffff" font-family="Helvetica" font-style="normal" font-weight="
bold">
          <tspan x="5.0" xml:space="preserve" y="78.75" textLength="200.0"
```

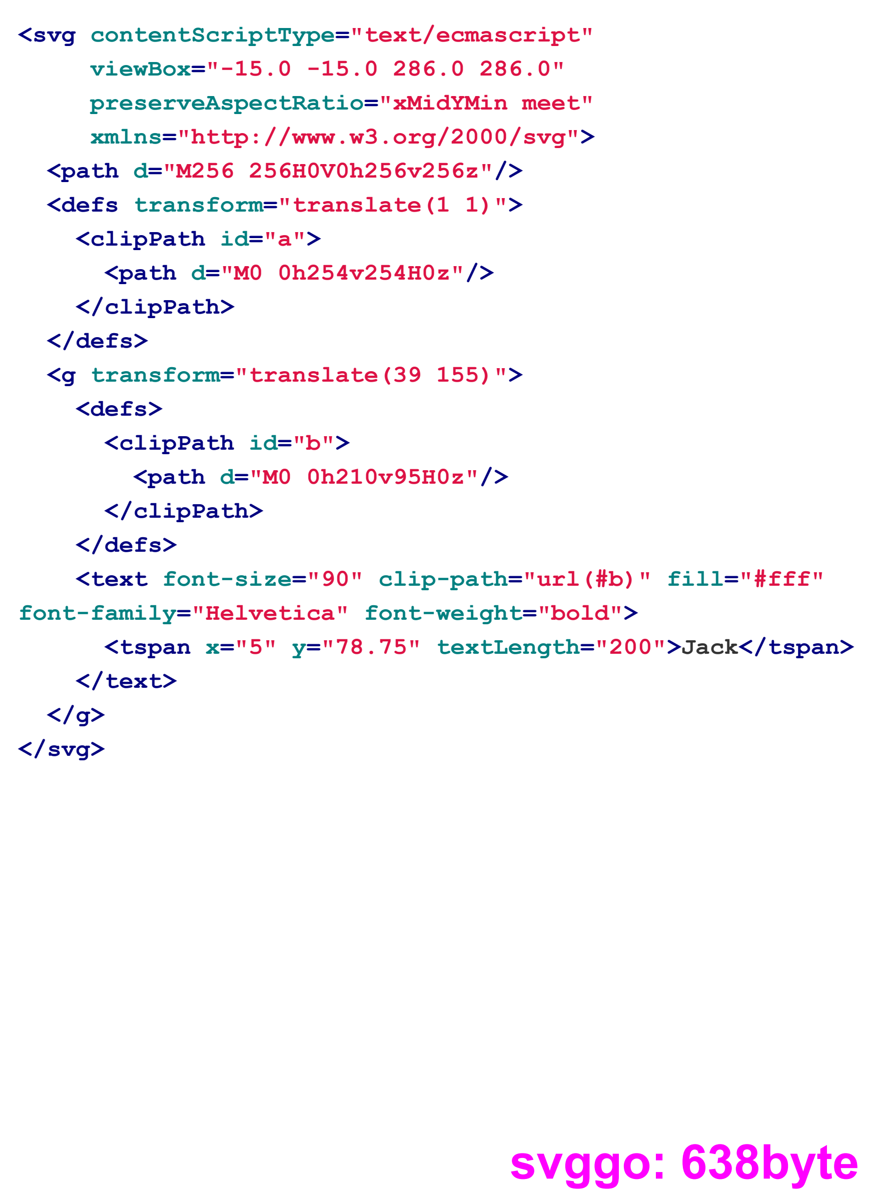


by cacoo: 1430byte

```
<svg contentScriptType="text/ecmascript"
     viewBox="-15.0 -15.0 286.0 286.0"
     preserveAspectRatio="xMidYMin meet"
     xmlns="http://www.w3.org/2000/svg">
  <path d="M256 256H0V0h256v256z"/>
  <defs transform="translate(1 1)">
    <clipPath id="a">
      <path d="M0 0h254v254H0z"/>
    </clipPath>
  </defs>
  <g transform="translate(39 155)">
    <defs>
      <clipPath id="b">
        <path d="M0 0h210v95H0z"/>
      </clipPath>
    </defs>
    <text font-size="90" clip-path="url(#b)" fill="#fff"
font-family="Helvetica" font-weight="bold">
      <tspan x="5" y="78.75" textLength="200">Jack</tspan>
    </text>
  </g>
</svg>
```

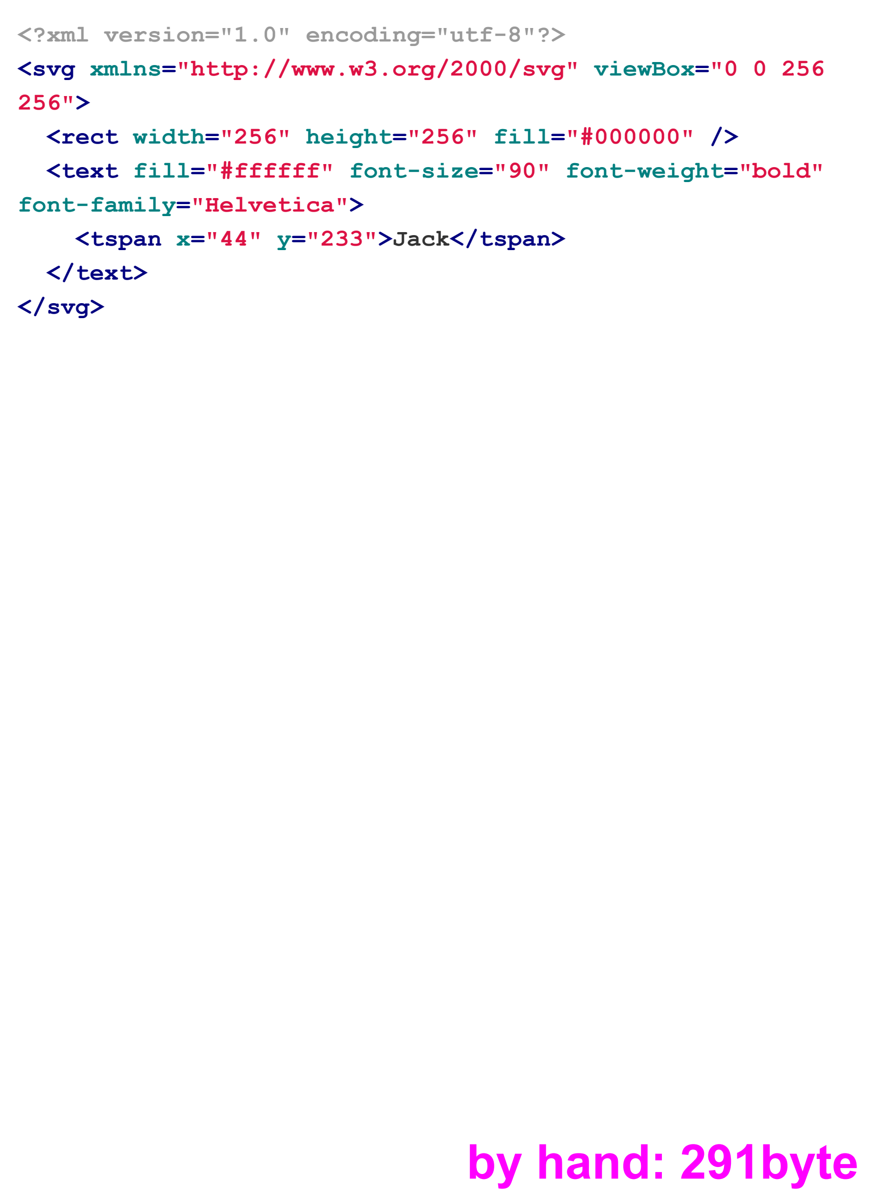
svggo: 638byte

Hand Write SVG



```
<svg contentScriptType="text/ecmascript"
     viewBox="-15.0 -15.0 286.0 286.0"
     preserveAspectRatio="xMidYMin meet"
     xmlns="http://www.w3.org/2000/svg">
  <path d="M256 256H0V0h256v256z"/>
  <defs transform="translate(1 1)">
    <clipPath id="a">
      <path d="M0 0h254v254H0z"/>
    </clipPath>
  </defs>
  <g transform="translate(39 155)">
    <defs>
      <clipPath id="b">
        <path d="M0 0h210v95H0z"/>
      </clipPath>
    </defs>
    <text font-size="90" clip-path="url(#b)" fill="#fff"
font-family="Helvetica" font-weight="bold">
      <tspan x="5" y="78.75" textLength="200">Jack</tspan>
    </text>
  </g>
</svg>
```

svggo: 638byte



```
<?xml version="1.0" encoding="utf-8"?>
<svg xmlns="http://www.w3.org/2000/svg" viewBox="0 0 256
256">
  <rect width="256" height="256" fill="#000000" />
  <text fill="#ffffff" font-size="90" font-weight="bold"
font-family="Helvetica">
    <tspan x="44" y="233">Jack</tspan>
  </text>
</svg>
```

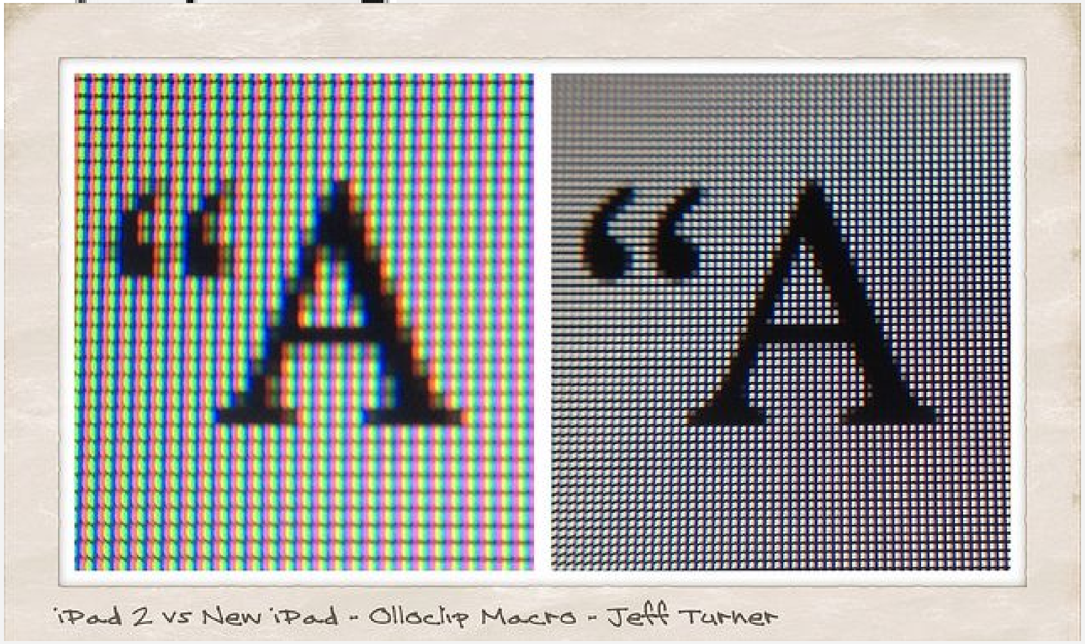
by hand: 291byte

Size Selection

Size selection

View Port Size

CSS Pixel Size



Device Pixel Ratio

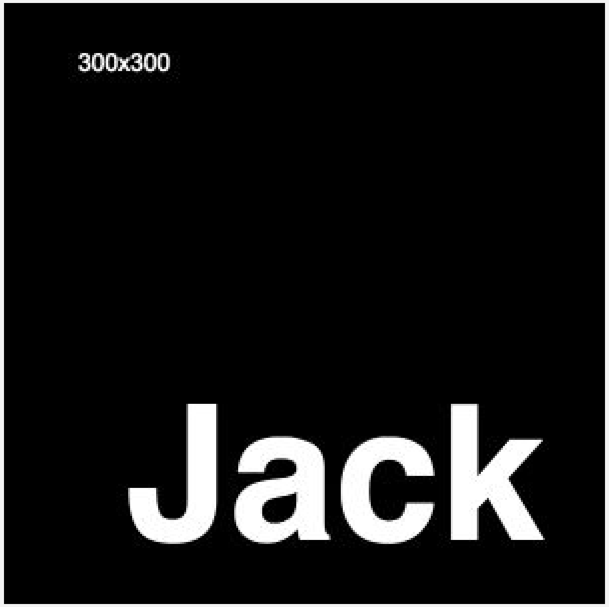
Device Pixel Size

https://www.flickr.com/photos/respres/6842257250/
https://www.flickr.com/photos/appleboy/8703913582

x1, x2, x3 … ?

100x100
1.9KB

200x200
3.5KB



300x300
5.1KB

Which is the best for client ?

browser decision from srcset

Fallback

```
<img src=100x100.png
     srcset="100x100.png 100w,
             200x200.png 200w,
             300x300.png 300w"
     sizes=100vw
     width=100px
     alt="select with srcset"
/>
```

Actual Image Size

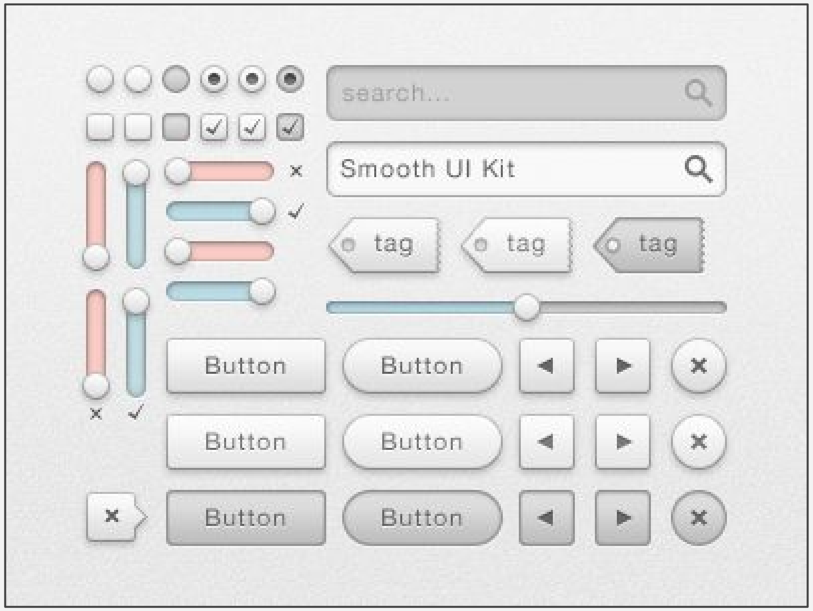
CSS Display Size

See also: http://labs.jxck.io/picture/

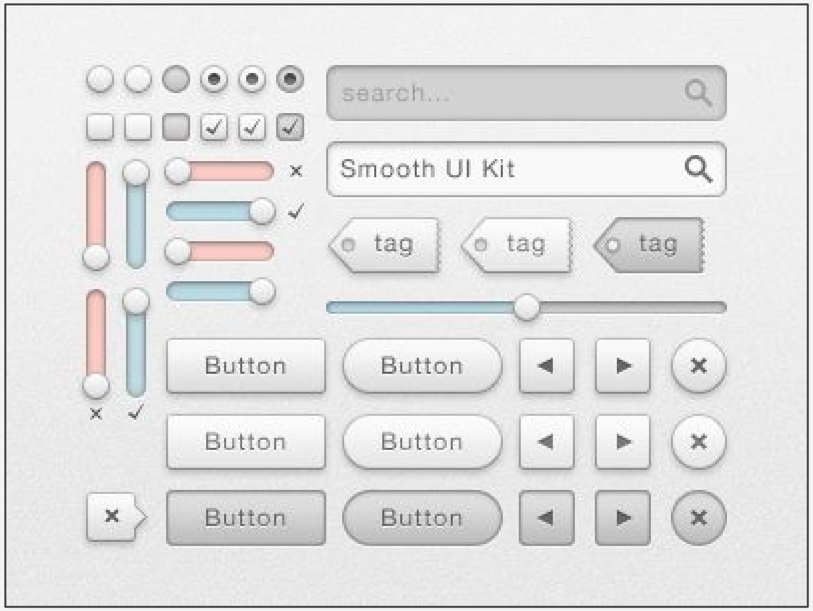
WebP

Alt Loss Less PNG

PNG(74KB)



WebP(62KB)



Alt Lossy JPEG

JPEG(74KB)

WebP(20KB)

Alt Animation GIF

GIF(262KB)

WebP(55KB)

Not Supported On Google Presentation

See also: http://labs.jxck.io/webp/

Picture

```
<picture>
  <source type=image/webp
          srcset="100x100.webp 100w,
                  200x200.webp 200w,
                  300x300.webp 300w"
          sizes=100px>
  <source type=image/png
          srcset="100x100.png 100w,
                  200x200.png 200w,
                  300x300.png 300w"
          sizes=100px>
  <img src=100x100.png
       width=100
       alt="select with picture source">
</picture>
```

WebP

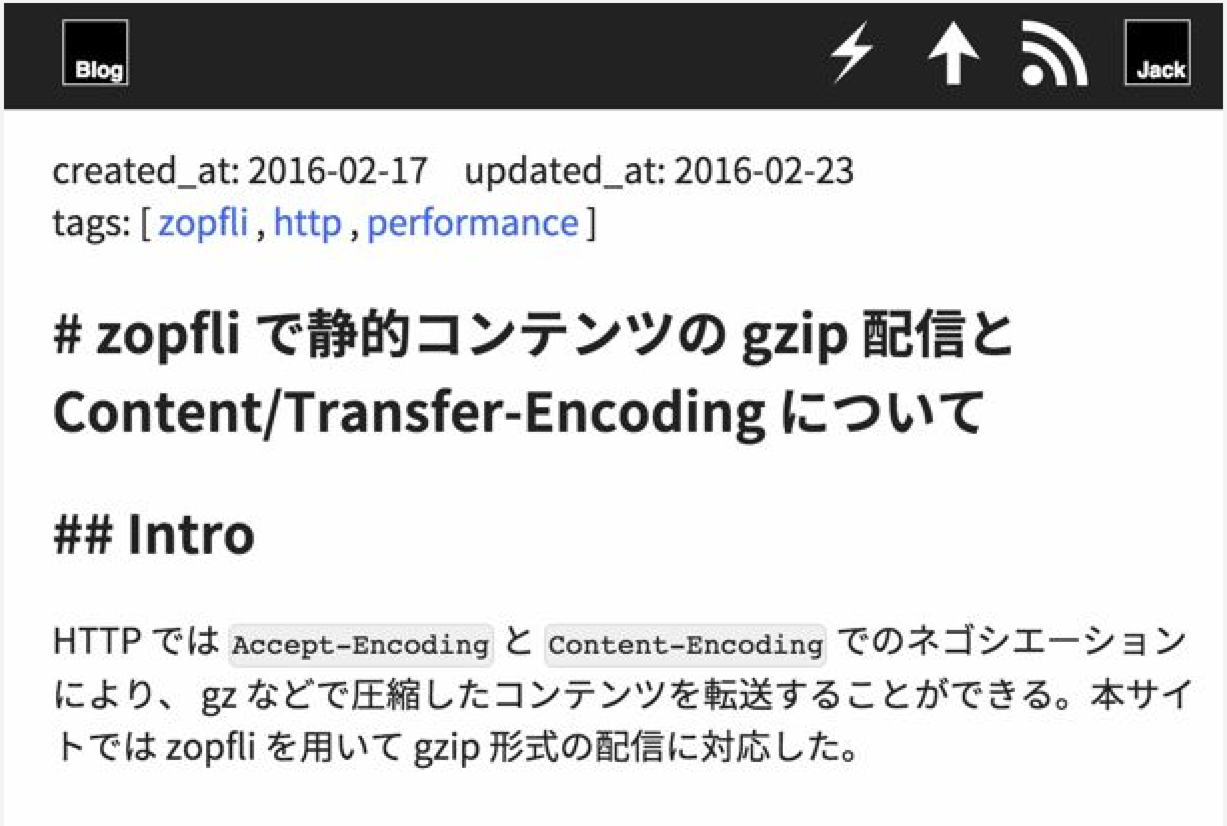
Fallback

See also: http://labs.jxck.io/picture/

gzip

zopfli

- Compatible with gzip
- Slow to compress
- Smaller than gzipped (1%~8% in my blog)



created_at: 2016-02-17 updated_at: 2016-02-23
tags: [zopfli , http , performance]

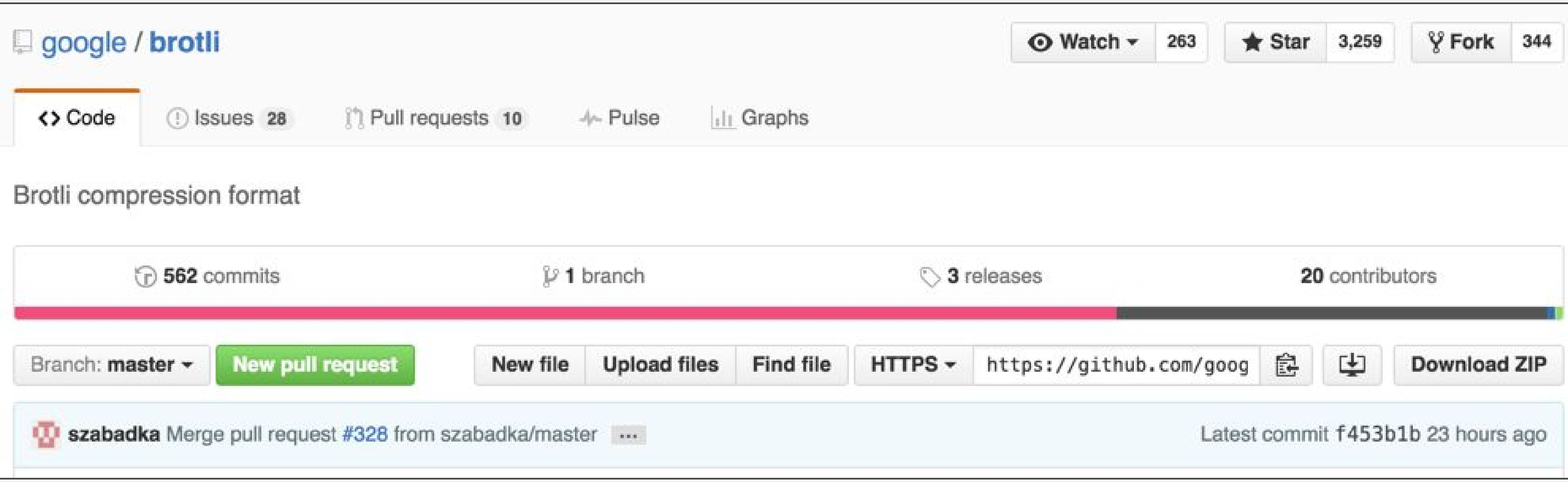
zopfli で静的コンテンツの gzip 配信と Content/Transfer-Encoding について

Intro

HTTP では `Accept-Encoding` と `Content-Encoding` でのネゴシエーションにより、gz などで圧縮したコンテンツを転送することができる。本サイトでは zopfli を用いて gzip 形式の配信に対応した。

brotli ?

- New algorithm for better compression
- Not compatible with gzip etc
- Require New Content Negotiation
    - Accept-Encoding: brotli



Brotli compression format

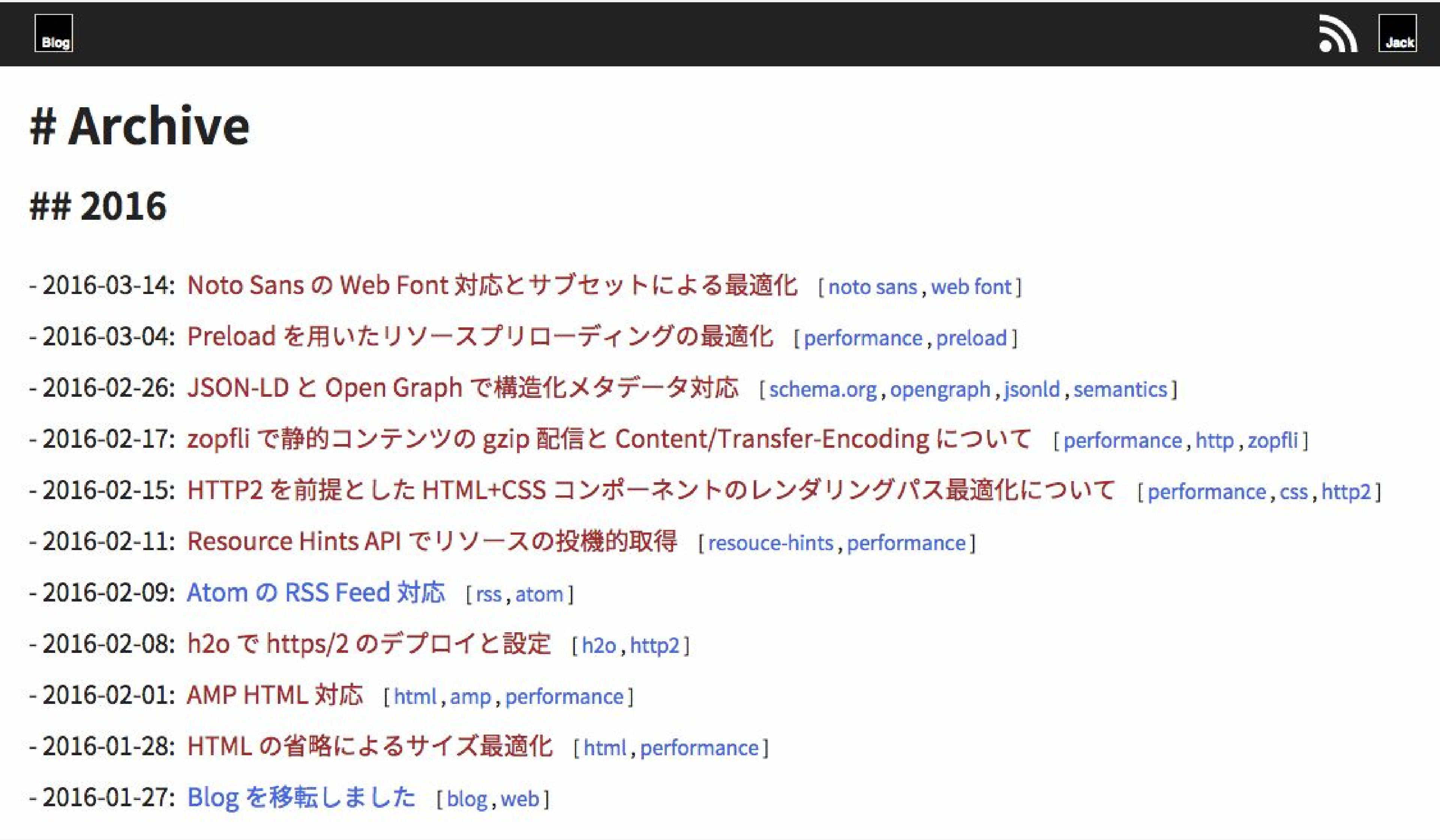
562 commits
1 branch
3 releases
20 contributors

szabadka Merge pull request #328 from szabadka/master … Latest commit f453b1b 23 hours ago

And more

- AMP HTML (done)
- Preload/Prefetch/Prerender etc (done)
- Service Worker (next)
- Cretical Rendering Path (wip)
- HTTP2 Cache Digest (wip)
- TLS (wip)
- etc

See more at blog.jxck.io



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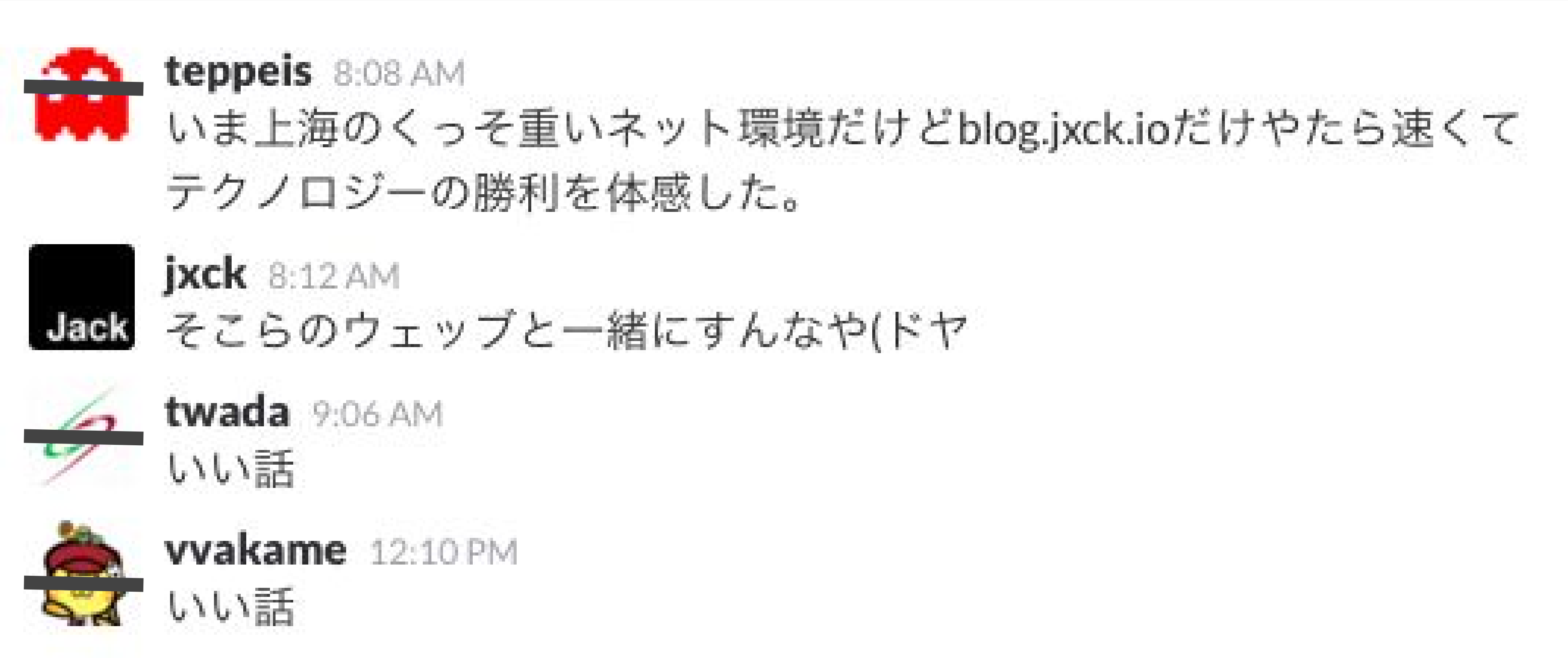
Result



[redacted]

teppeis 8:08 AM

いま上海のくっそ重いネット環境だけどblog.jxck.ioだけやたら速くてテクノロジーの勝利を体感した。

jxck 8:12 AM

そこらのウェッブと一緒にすんなや(ドヤ

[redacted]

twada 9:06 AM

いい話

[redacted]

vvakame 12:10 PM

いい話

Small is Fast

Fast is Justice

I don’t talk about

Performance

but

Optimization

as

Hobby

so

Measure yourself

thanks

Jack