



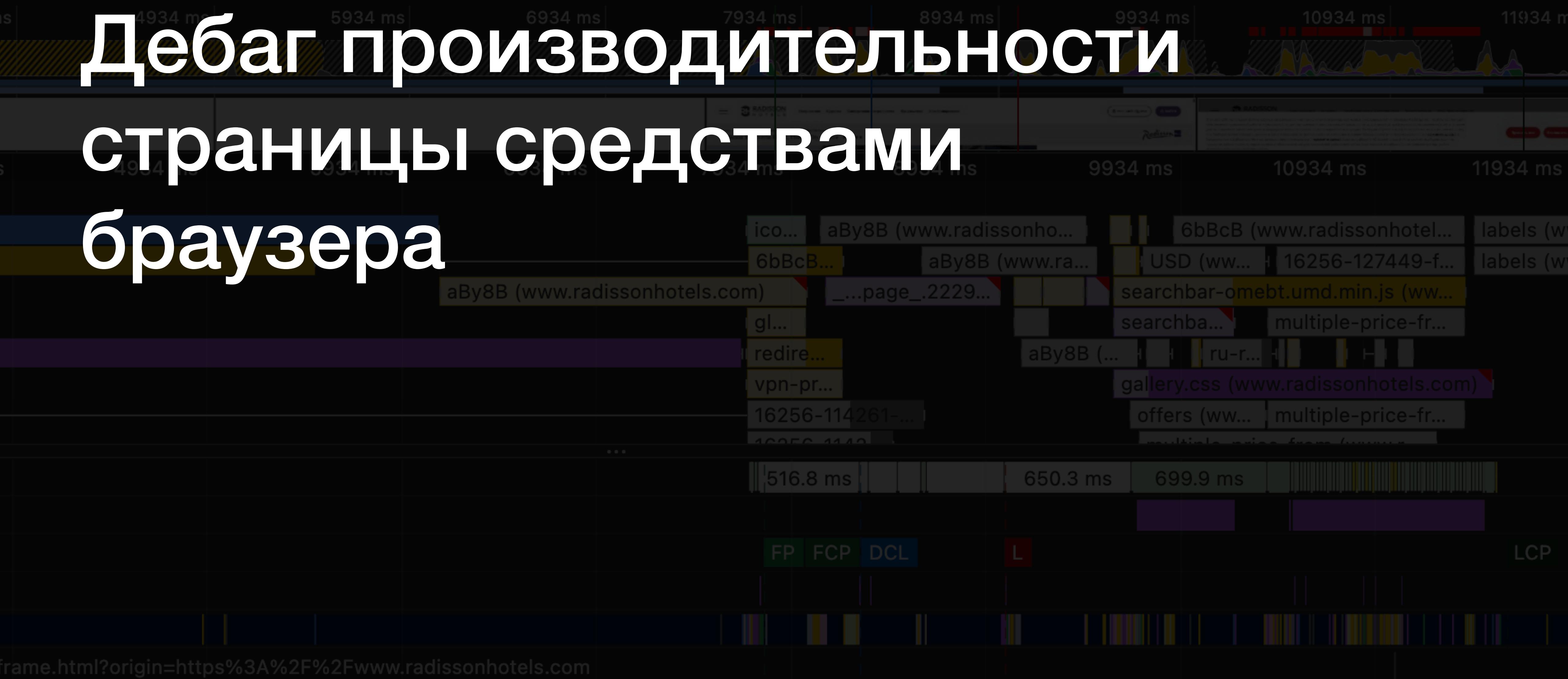
# DEBUGGING PAGE PERFORMANCE WITH BROWSER TOOLS



MIKITA DUBKO  
FRIENDLY BEARD, WEB STANDARDS



# Дебаг производительности страницы средствами браузера



Никита Дубко, «Веб-стандарты»

A portrait of a man with long brown hair and a beard, smiling and pointing upwards with his right hand. He is wearing a black t-shirt with white text that is partially visible. A small portion of the text "on, Belarus" can be seen.

# Mikita Dubko

- Lead Product Manager
- "Web Standards" podcast
- performance lover
- from Belarus

# Performance



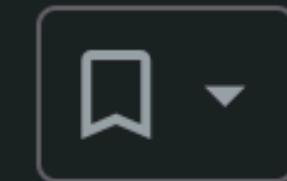
Time



Money



# How Rakuten 24's investment in Core Web Vitals increased revenue per visitor by 53.37% and conversion rate by 33.13%



By measuring real users' Web Vitals, Rakuten 24 also found that a good Largest Contentful Paint (LCP) can lead to a conversion rate increase of 61.13%.



Hayoung Lee



Linh Duong



Ryunosuke Akiba



Shogo Kashiwase

# Metrics

- Backend API response
- DataBase requests
- Network delays
- **Frontend loading**
- **Interactions**
- Perceived performance

# Core Web Vitals ⚡

*(Loading)*

# LCP

Largest Contentful Paint



*(Interactivity)*

# INP

Interaction to Next Paint



*(Visual Stability)*

# CLS

Cumulative Layout Shift



Lab  vs RUM 

# Real User Monitoring

# Lighthouse



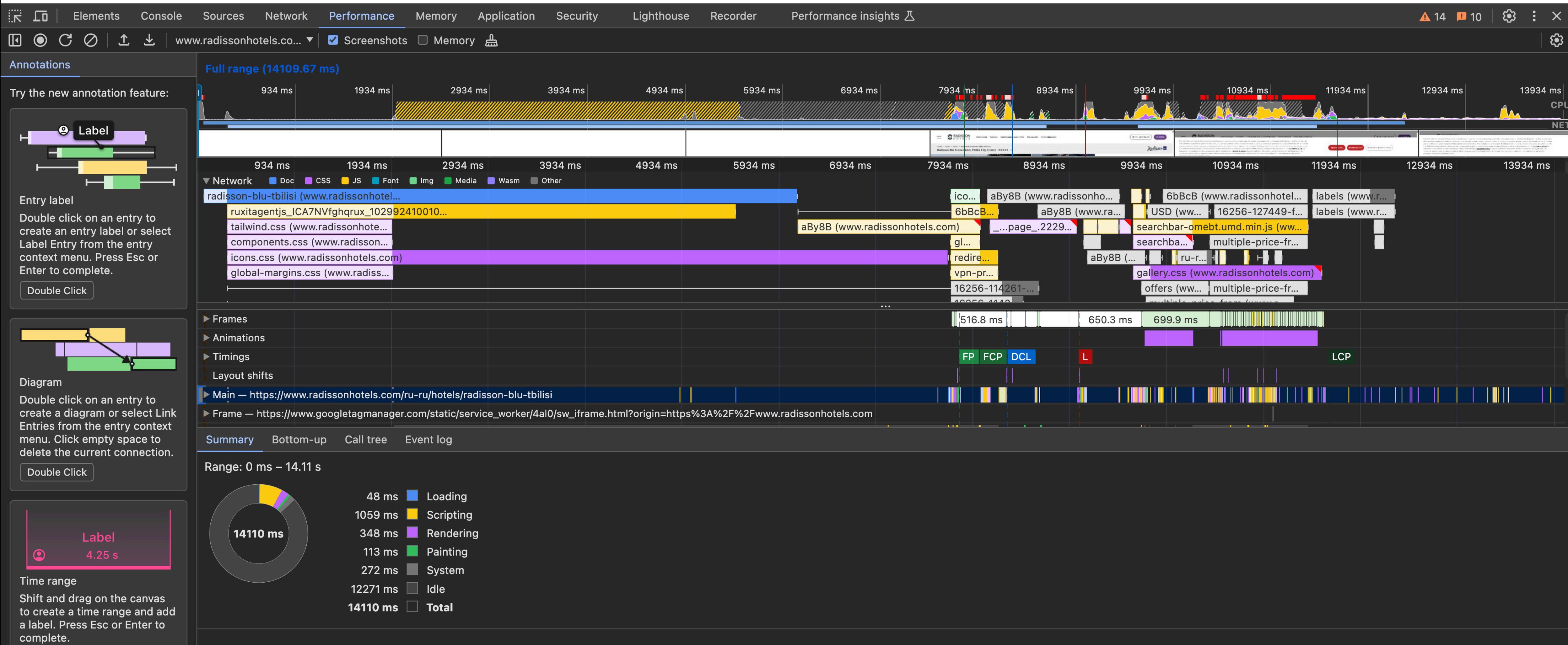


Chrome for Developers

# Chrome UX Report



Этот веб-сайт использует файлы cookie и связанные с ними технологии (например, веб-маяки, пиксельные теги и объекты Flash) (далее - «файлы cookie») для обеспечения правильной работы и безопасности, для улучшения и персонализации вашего опыта, для анализа трафика и использования веб-сайта, а также для запоминания ваших настроек и поддержки наших усилий в области маркетинга и продаж. Выбирая «Принять все файлы cookie», вы соглашаетесь с тем, что Radisson может собирать данные о вас и использовать файлы cookie, как описано в нашем Уведомлении о конфиденциальности [ [нажмите здесь](#) ] и Уведомлении о файлах cookie и связанных с ними технологиях [ [нажмите здесь](#) ]. Если вы выберете «Отклонить все файлы cookie», мы будем хранить только те файлы cookie, которые являются обязательными для правильной работы веб-сайта. Если вы хотите выбрать более конкретные настройки, выберите «Настройки файлов cookie».

[Принять все](#)[Отклонить все](#)[Настройки файлов cookie](#)



# Performance panel: Analyze your website's performance





Dale St. Marthe



Use the **Performance** panel to analyze your website's performance.



# Configuration

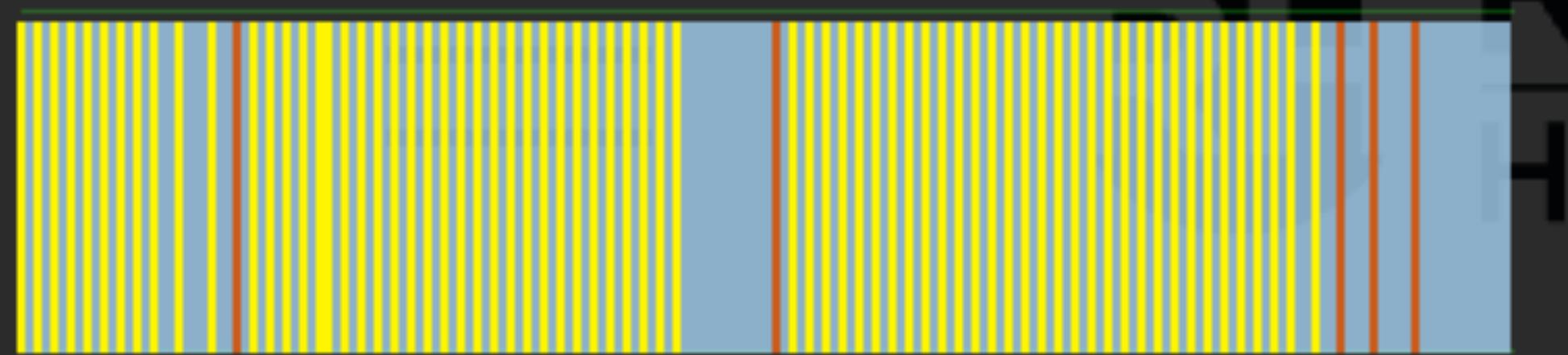


CPU: 4x slowdown ▼

Network: Slow 4G ▼

## Frame Rate

58.2 fps



## GPU raster

Главная > Грузия > **on**

## GPU memory

**Memory**  
**Radisson Blu**  
39.4 MB used  
916.5 MB max

Let's inspect it

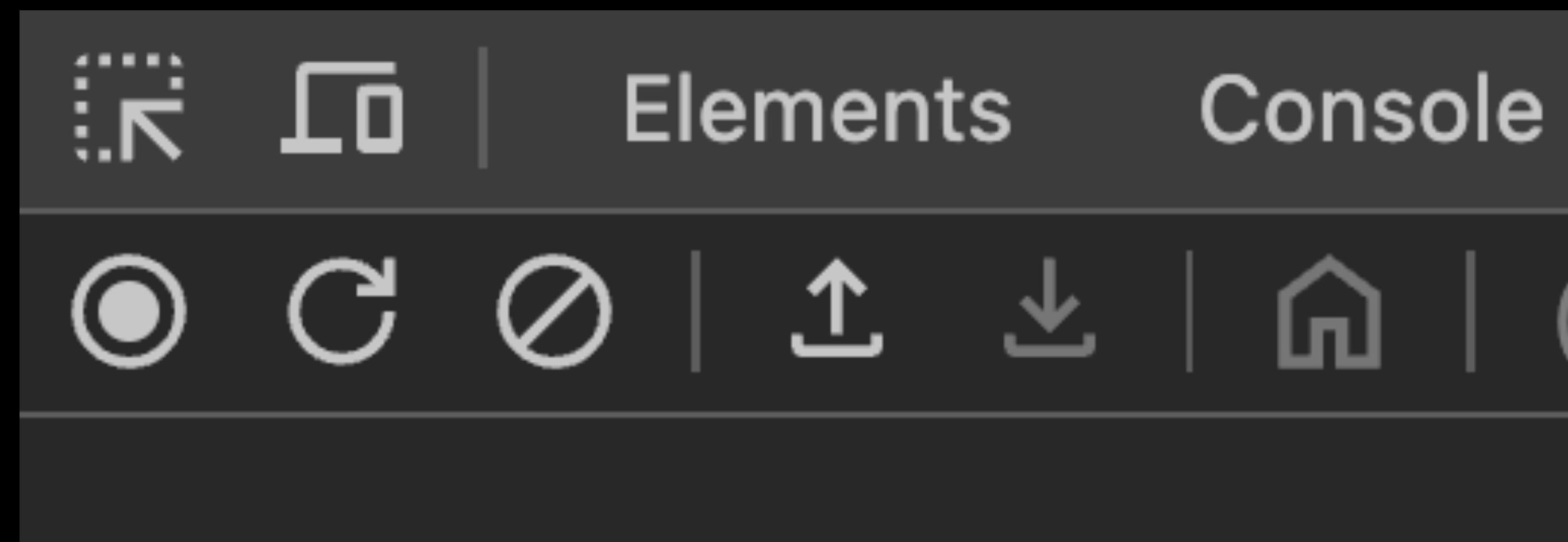


`performance.mark()`  
`performance.measure()`



```
node --inspect-brk index.js
```

**about:inspect**



```
28 traceEvents : [
29     {"args": {"name": "swapper"}, "cat": "__metadata", "name": "thread_name", "ph": "M", "pid": 0, "tid": 0, "ts": 0},
30     {"args": {"name": "CrBrowserMain"}, "cat": "__metadata", "name": "thread_name", "ph": "M", "pid": 29157, "tid": 259, "ts": 0},
31     {"args": {"name": "Compositor"}, "cat": "__metadata", "name": "thread_name", "ph": "M", "pid": 29226, "tid": 32259, "ts": 0},
32     {"args": {"name": "CrRendererMain"}, "cat": "__metadata", "name": "thread_name", "ph": "M", "pid": 29226, "tid": 259, "ts": 0},
33     {"args": {"name": "ThreadPoolServiceThread"}, "cat": "__metadata", "name": "thread_name", "ph": "M", "pid": 29226, "tid": 32259, "ts": 0},
34     {"args": {"name": "ThreadPoolServiceThread"}, "cat": "__metadata", "name": "thread_name", "ph": "M", "pid": 29157, "tid": 36099, "ts": 0},
35     {"args": {"name": "Chrome_IOThread"}, "cat": "__metadata", "name": "thread_name", "ph": "M", "pid": 29157, "tid": 36099, "ts": 0},
36     {"args": {"name": "VizCompositorThread"}, "cat": "__metadata", "name": "thread_name", "ph": "M", "pid": 29166, "tid": 36099, "ts": 0},
37     {"args": {"name": "ThreadPoolServiceThread"}, "cat": "__metadata", "name": "thread_name", "ph": "M", "pid": 29166, "tid": 36099, "ts": 0},
38     {"args": {"name": "CrGpuMain"}, "cat": "__metadata", "name": "thread_name", "ph": "M", "pid": 29166, "tid": 259, "ts": 0},
39     {"args": {"name": "CompositorTileWorker1"}, "cat": "__metadata", "name": "thread_name", "ph": "M", "pid": 29157, "tid": 36099, "ts": 0},
40     {"args": {"name": "v8:ProfEvntProc"}, "cat": "__metadata", "name": "thread_name", "ph": "M", "pid": 29226, "tid": 82619, "ts": 0},
41     {"args": {"name": "Chrome_ChildIOThread"}, "cat": "__metadata", "name": "thread_name", "ph": "M", "pid": 29226, "tid": 36099, "ts": 0},
42     {"args": {"name": "ThreadPoolForegroundWorker"}, "cat": "__metadata", "name": "thread_name", "ph": "M", "pid": 29157, "tid": 36099, "ts": 0},
43     {"args": {"name": "Chrome_DevToolsADBThread"}, "cat": "__metadata", "name": "thread_name", "ph": "M", "pid": 29157, "tid": 36099, "ts": 0},
44     {"args": {"name": "CPUThrottlingThread"}, "cat": "__metadata", "name": "thread_name", "ph": "M", "pid": 29226, "tid": 5000, "ts": 0},
45     {"args": {"name": "Chrome_ChildIOThread"}, "cat": "__metadata", "name": "thread_name", "ph": "M", "pid": 29166, "tid": 36099, "ts": 0},
46     {"args": {"name": "ThreadPoolForegroundWorker"}, "cat": "__metadata", "name": "thread_name", "ph": "M", "pid": 29226, "tid": 36099, "ts": 0},
47     {"args": {"name": "ThreadPoolForegroundWorker"}, "cat": "__metadata", "name": "thread_name", "ph": "M", "pid": 29226, "tid": 36099, "ts": 0},
48     {"args": {"name": "MemoryInfra"}, "cat": "__metadata", "name": "thread_name", "ph": "M", "pid": 29157, "tid": 37635, "ts": 0},
49     {"args": {"name": "ThreadPoolForegroundWorker"}, "cat": "__metadata", "name": "thread_name", "ph": "M", "pid": 29226, "tid": 36099, "ts": 0},
50     {"args": {"name": "ThreadPoolForegroundWorker"}, "cat": "__metadata", "name": "thread_name", "ph": "M", "pid": 29226, "tid": 36099, "ts": 0},
51     {"args": {"name": "ThreadPoolForegroundWorker"}, "cat": "__metadata", "name": "thread_name", "ph": "M", "pid": 29226, "tid": 36099, "ts": 0},
52     {"args": {"name": "ThreadPoolForegroundWorker"}, "cat": "__metadata", "name": "thread_name", "ph": "M", "pid": 29226, "tid": 36099, "ts": 0},
53     {"args": {"name": "ThreadPoolForegroundWorker"}, "cat": "__metadata", "name": "thread_name", "ph": "M", "pid": 29226, "tid": 36099, "ts": 0},
54     {"args": {"name": "ThreadPoolForegroundWorker"}, "cat": "__metadata", "name": "thread_name", "ph": "M", "pid": 29226, "tid": 36099, "ts": 0},
55     {"args": {"name": "ThreadPoolForegroundWorker"}, "cat": "__metadata", "name": "thread_name", "ph": "M", "pid": 29226, "tid": 36099, "ts": 0}
```



# cpupro

A viewer for CPU profiles captured in V8 runtimes like Node.js, Deno or Chromium browsers

**Open file (.cpuprofile, .devtools, .json, .jsonxl)**    or    drop a file on the page

CPUPro is a server-less application that processes profiles locally without transmitting data elsewhere, it securely opens and analyzes your profiles directly on your device.

#### Supported formats:

- [V8 CPU profile](#) (.cpuprofile)
- [V8 log](#) preprocessed with [--preprocess](#) (.json)
- [Chromium Performance Profile](#) (.json)
- [Edge Enhanced Performance Traces](#) (.devtools)



#### Try out example:



V8 CPU profile



V8 log (preprocessed)



Chromium Profile



Edge EPT

Know your tools 😊

# **Chrome DevTools — спрятанные полезности**

Никита Дубко  
Яндекс

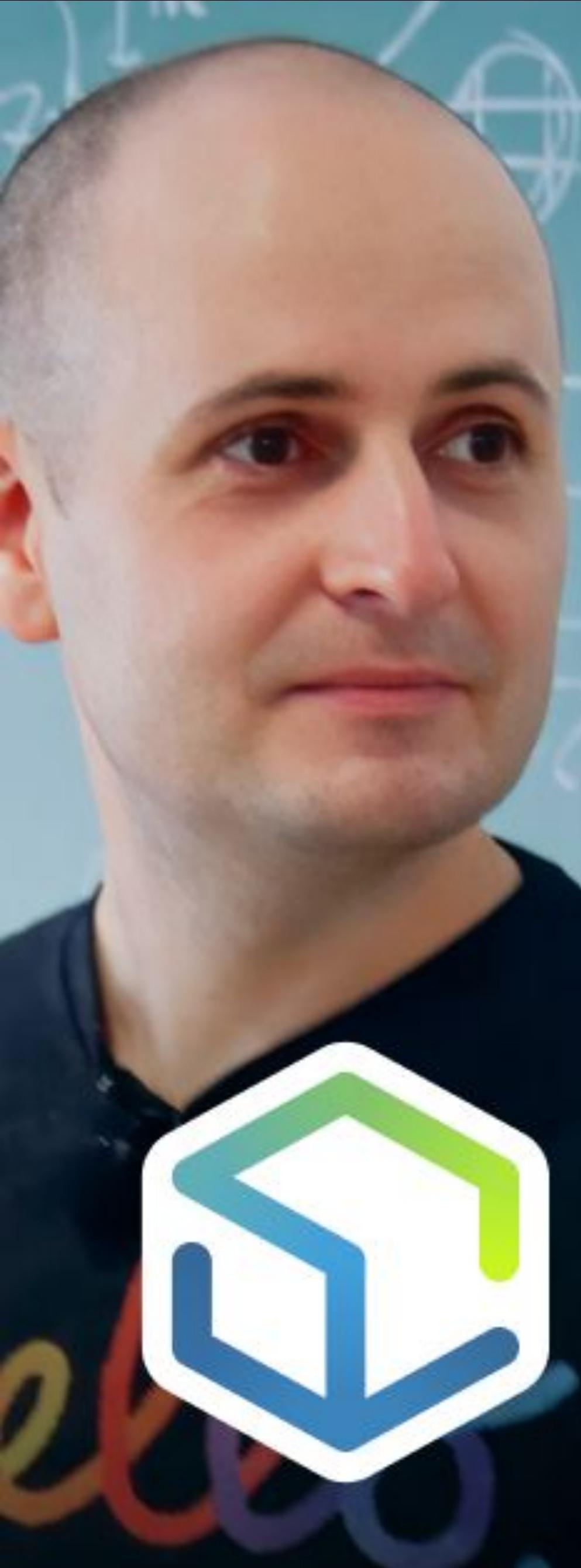


**24 и 25  
октября**





Веб-стандарты





mefody.dev

4 507 subscribers



Open



Mute



More

info

Мысли о рабочих задачах и не только.  
Фронтенд, тимлидство, спикерство, D&D.  
Автор — [@dark\\_mefody](#)

more

share link

[@mefody\\_dev](#)



[t.me/mefody\\_dev](https://t.me/mefody_dev)