

THE JOURNEY OF BUILDING OPENSPEEDMONITOR

Learnings from unexpectedly finding ourselves developing
a FLOSS project

FOSDEM 2020



Are we product developers?

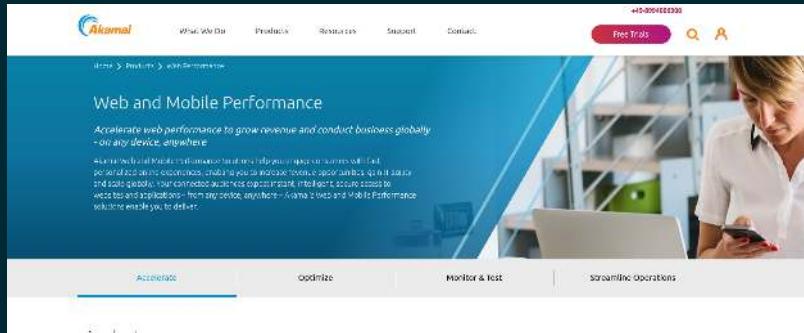


Do we earn our money with open source?

Do we work in academic research?



Is webperformance our core business?



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Home > Products > Web Performance

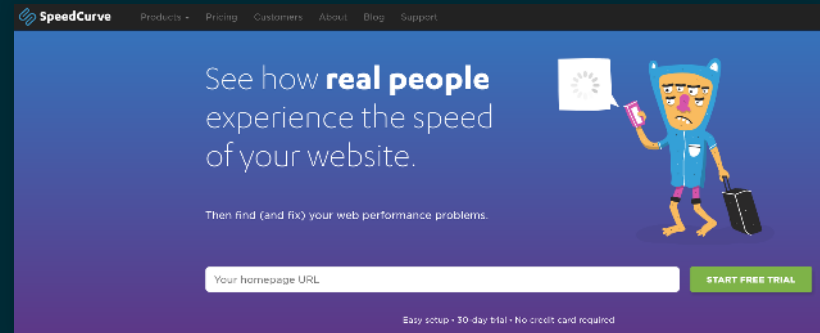
Web and Mobile Performance

Accelerate web performance to grow revenue and conduct business globally - on any device, anywhere.

Accelerate the performance of your website and mobile applications to improve user experience, reduce server and network costs, and protect your business from DDoS attacks. Akamai's global network of servers and edge locations can help you deliver content faster, reduce latency, and improve your website's overall performance. Akamai's Web and Mobile Performance solutions enable you to deliver:

- Accelerate
- Optimize
- Monitor & Test
- Streamline Operations

Application



SpeedCurve Products Pricing Customers About Blog Support

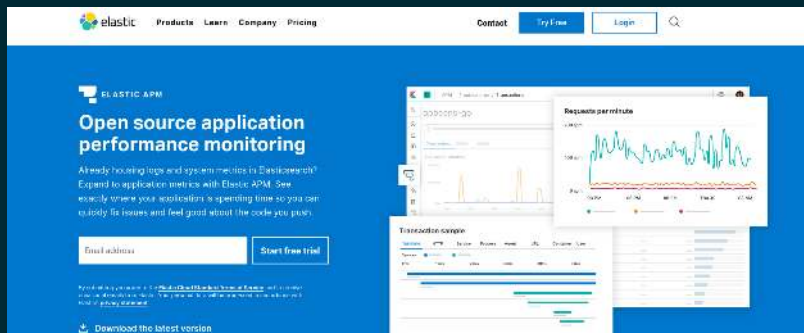
See how **real people** experience the speed of your website.

Then find (and fix) your web performance problems.

Your homepage URL

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Easy setup • 30-day trial • No credit card required



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ELASTIC APM

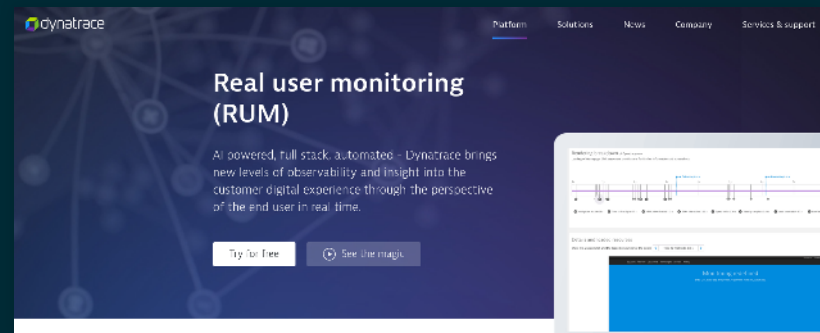
Open source application performance monitoring

Already housing logs and system metrics in Elasticsearch? Expand to application metrics with Elastic APM. See exactly where your application is spending time so you can quickly fix issues and feel good about the code you push.

Find address

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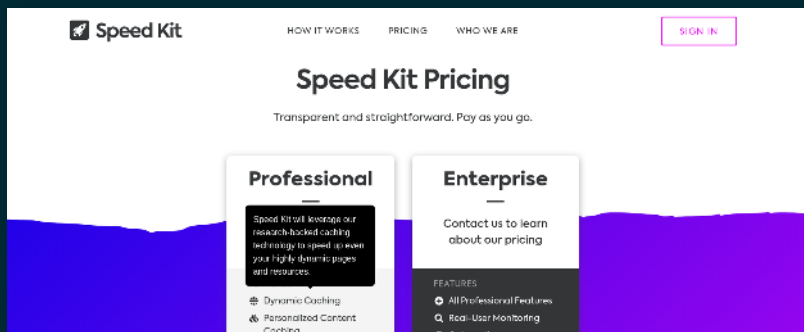


dynatrace Platform Solutions News Company Services & support

Real user monitoring (RUM)

AI powered, full stack, automated - Dynatrace brings new levels of observability and insight into the customer digital experience through the perspective of the end user in real time.

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Speed Kit HOW IT WORKS PRICING WHO WE ARE [SIGN IN](#)

Speed Kit Pricing

Transparent and straightforward. Pay as you go.

Professional

Speed Kit will leverage our research-backed caching technology to speed up even your highly dynamic pages and resources.

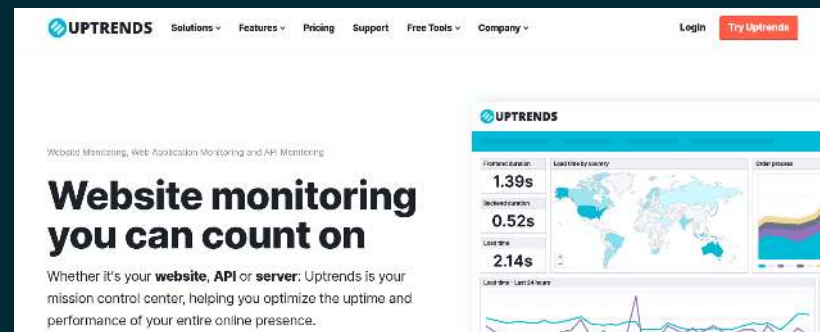
- Dynamic Caching
- Personalized Content Caching

Enterprise

Contact us to learn about our pricing

FEATURES

- All Professional Features
- Real-User Monitoring
- Onboarding



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Website Monitoring, Web Application Monitoring and API Monitoring

Website monitoring you can count on

Whether it's your **website, API or server**, Uptrends is your mission control center, helping you optimize the uptime and performance of your entire online presence.

UPTRENDS

Website Monitoring, Web Application Monitoring and API Monitoring

Uptime duration: **1.39s**

Load time: **0.52s**

Load time: **2.14s**

Order process

Load time: Last 24 hours

STILL

- OpenSpeedMonitor development since 8 years
- daily web performance work

Stefan Burnicki

@_sburnicki
@iteratec



Nils Kuhn

Software developer and architect
@iteratec

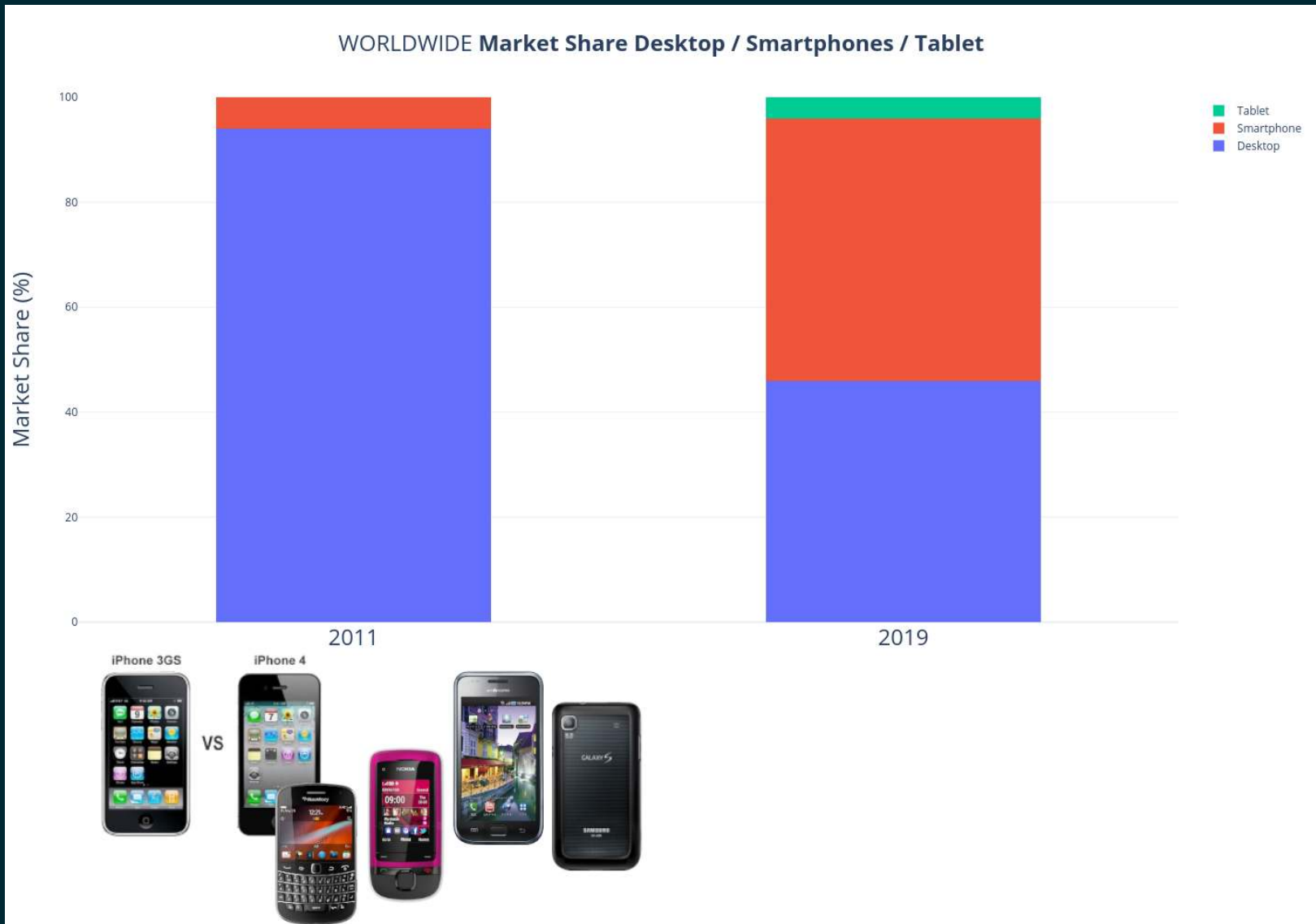


WHAT HAPPENED ???

2011

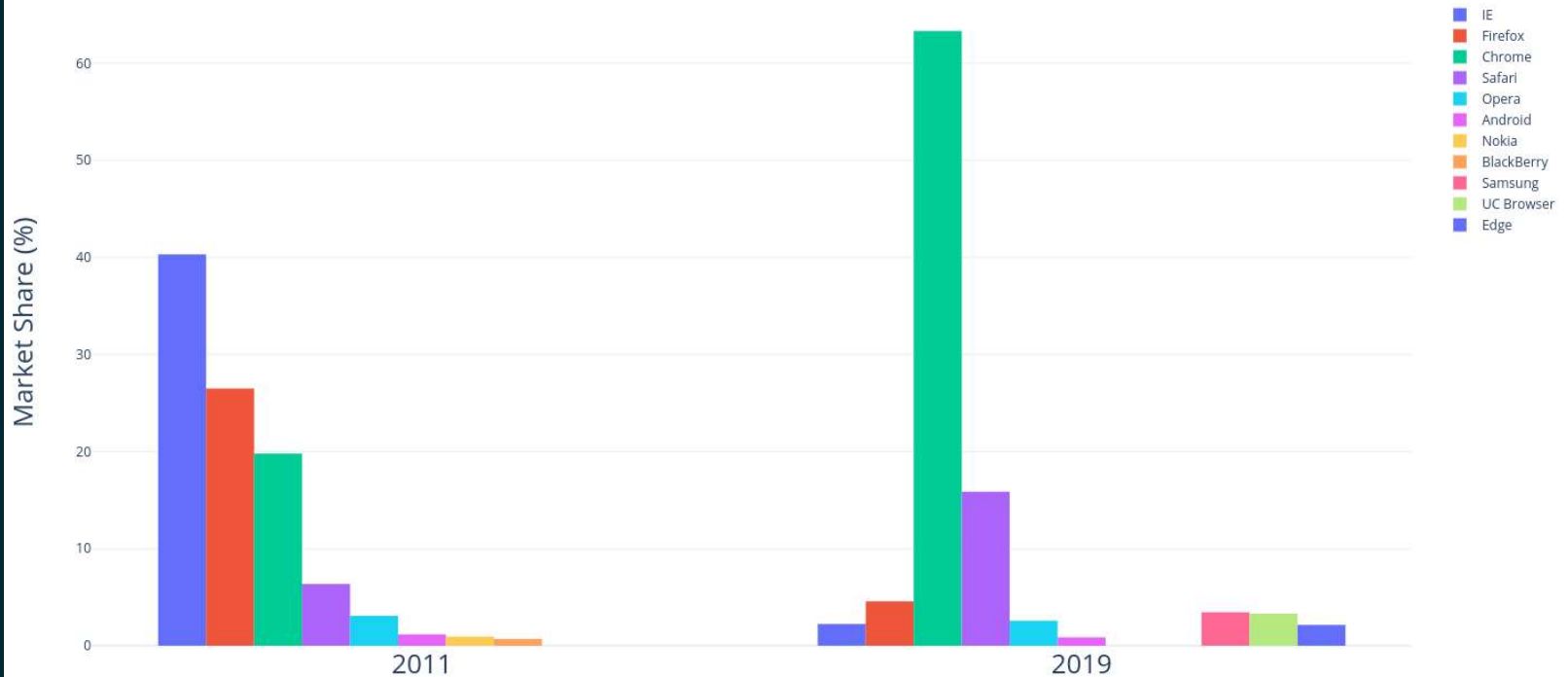
one of Europes biggest e-commerce shops
asked us to evaluate their
webperformance.

2011 was different...



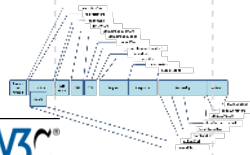
2011 was different...

WORLDWIDE Market Share Browsers





Page Speed Insight
mod_pagespeed



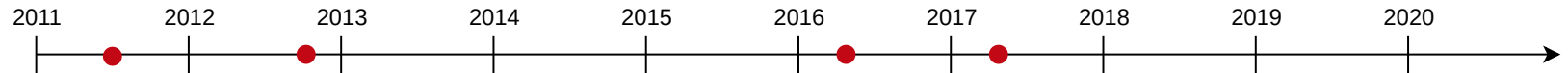
W3C[®]
Navigation
Timing API



Lighthouse



W3C[®]
Resource
Timing API



?

REQUIREMENTS OF OUR CUSTOMER

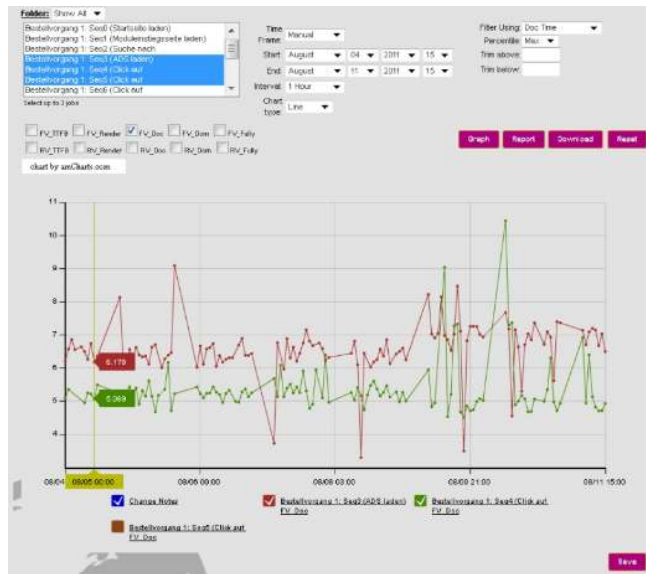
- continuous monitoring
- deep dive into single results / outliers
- more detailed results than existing monitoring

initial setup 2011

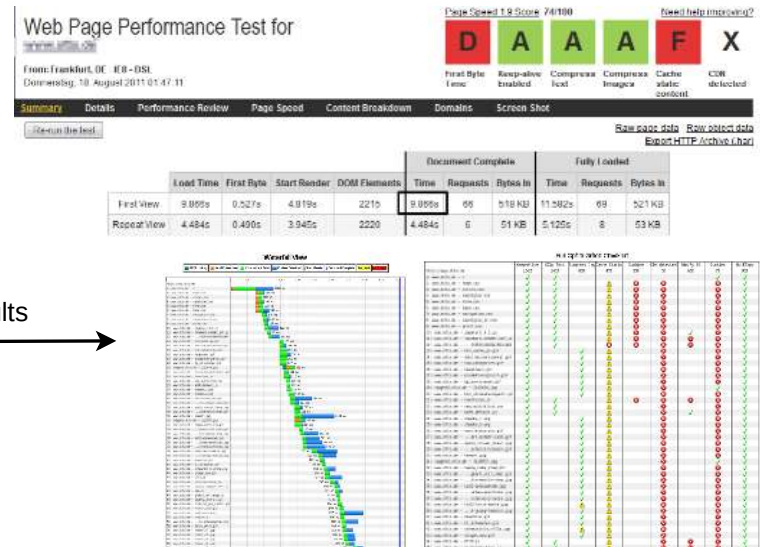
The screenshot shows the 'WEBPAGETEST MONITOR' interface. At the top, there are navigation tabs: HOME, JOBS, SCRIPTS, ALERTS, NOTES, REPORTS, RESULTS, and STATUS. Below these are sub-tabs: CONFIG, HOSTS, LOCATIONS, and USERS. The main section is titled 'JOBS' and displays a table of test jobs. The table has columns for 'Job', 'Host Location', 'Times', 'Runs', 'Total', 'Alerts', 'Last', and 'Actions'. Three jobs are listed, all with a status of 'Completed'.

Automation

The screenshot shows the 'WEBPAGETEST' interface with the title 'Test a website's performance'. It features a 'START TEST' button and a form to 'Enter a Website URL'. Below the form, there are options for 'Test Location' (Default: VA USA (Desktop, Android, iOS)) and 'Browser' (Default: Chrome). There are also links for 'Advanced Testing', 'Simple Testing', 'Visual Comparison', and 'Tracroute'.



Results



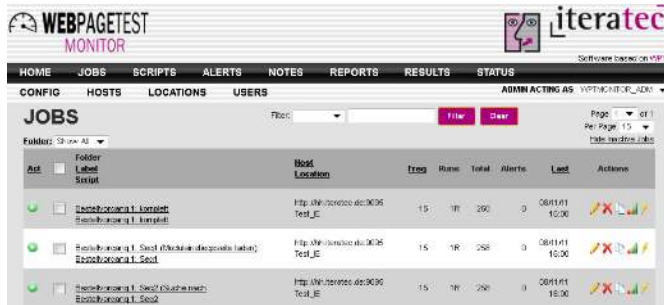
FURTHER REQUIREMENTS...

- measure customer journeys through the shop
- KPI to describe the overall performance of the shop

2012

started development which led to OSM

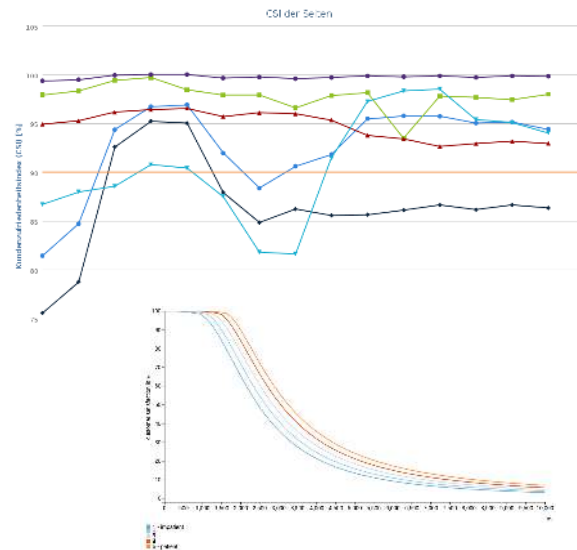
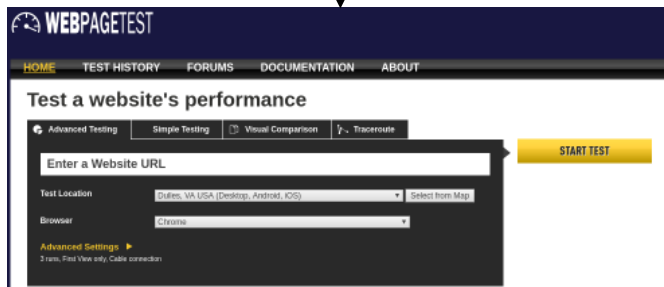
OSM Setup 2012



OPEN SPEED
MONITOR

Derivation
of CSI


Automation





2014

idea: Open Source

all the work up to initial push to public github repo

 develop



 **nilskuhn** committed on 25 Nov 2014 1 parent [cc52ba3](#) commit [a54a3abc02e88914d0915157c97a541f4d67c6b2](#)

...mistakes have been made

LESSON LEARNED:

**open sourcing a project is more than
pushing to github**

OPEN SPEED

Go to...

Log in

Info

MeasurementMeasurement resultsCSI

Dashboard

Results

▼ Aggregation and time frame

Aggregation

Interval:Raw Data

Time frame

last 4 weeks

Start:2019-01-31T23:00:00.000

☐ set time manually12:30

End:2019-03-20T22:59:00.000

☐ set time manually12:30

▼ Filter jobs

Folder:

undefined

Page:

undefined

Browser:

Chrome (Chrome)

Firefox (Firefox)

IE (IE)

undefined (undefined)

☐ Select all Browsers

simpleadvanced

▼ Choose measured variables

First View:

Load times

Repeated View:

Load times

Load times

Trim below

Trim above

it was a power user tool only

Measurement

Measurement results

CSI

Dashboard

Static sight

Weight

Gewichtungen CSI

Browser

| Browser | IE | Firefox | Chrome | undefined |
|------------|-----|---------|--------|-----------|
| Gewichtung | 1.0 | 1.0 | 1.0 | 0.0 |

Download as CSV

Page

| Page | undefined |
|------------|-----------|
| Gewichtung | 0.0 |

Download as CSV

Tageszeit

| Stunde | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 |
|------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Gewichtung | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |

Download as CSV


feature "CSI" remains inaccessible for others

Multistep #376

 Closed iteratec-hh wants to merge 79 commits into `WPO-Foundation:master` from `iteratec-hh:multistep` 

 Conversation 1

 Commits 79

 Checks 0

 Files changed 126

+46,462 -7,216 

merging our changes into WebPagetest was already impossible
















2015

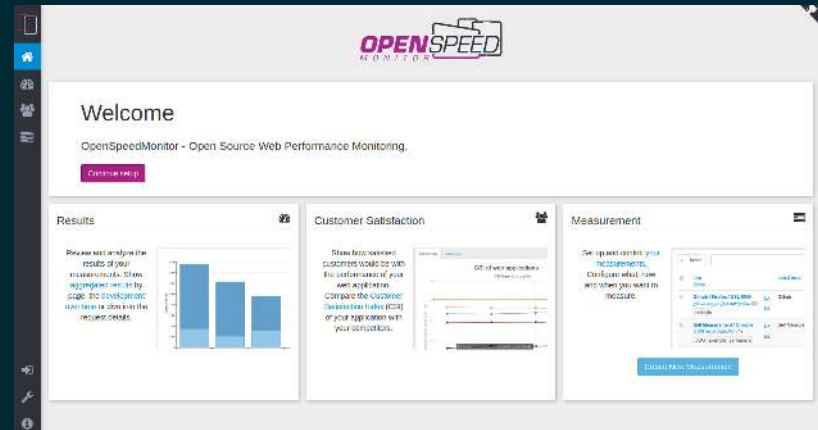
- more customers for web performance
- still a small, changing team of developers
- web performance requirements evolve

2016

invest time in OSS

- re-implement multistep measurement in WPT
- make OSM more usable

| | | |
|---|--|---|
|  | Multistep support for result page #684 by sburnicki was merged on 15 Aug 2016 | |
|  | Multistep support for breakdown and performance optimization pages #680 by sburnicki was merged on 10 Aug 2016 | 3 |
|  | Multistep support for compare/filmstrip view and filmstrip/frame export #677 by sburnicki was merged on 4 Aug 2016 | |
|  | Multistep support for custom waterfalls #676 by sburnicki was merged on 1 Aug 2016 | |
|  | Multistep pageimages #675 by sburnicki was merged on 1 Aug 2016 | |
|  | Multistep changes for details page #673 by sburnicki was merged on 1 Aug 2016 | |
|  | Multistep changes for Screen Shot page and header #659 by sburnicki was merged on 14 Jul 2016 | |
|  | Measuring a step without "onload" event #654 opened on 8 Jul 2016 by sburnicki | 6 |
|  | Design of multistep result pages #653 by sburnicki was closed on 9 Aug 2016 | 3 |
|  | Multistep support for waterfall & optimization checklist images #652 by sburnicki was merged on 6 Jul 2016 | |
|  | Multistep support for JSON results #651 by sburnicki was merged on 6 Jul 2016 | |
|  | Multistep support for XML results #650 by sburnicki was merged on 29 Jun 2016 | |
|  | RefactorTests: Loading and representing result data, XML generation #646 by sburnicki was merged on 27 Jun 2016 | |
|  | Multistep: Result processing on server #634 by sburnicki was merged on 9 Jun 2016 | |
|  | wptdriver: Adjustments for multistep support #620 by sburnicki was merged on 2 Jun 2016 | 2 |



LESSON LEARNED:

working together with the community is key

- multistep was considered during WPT development
- first issues on github appeared

2017

mobile is getting into focus



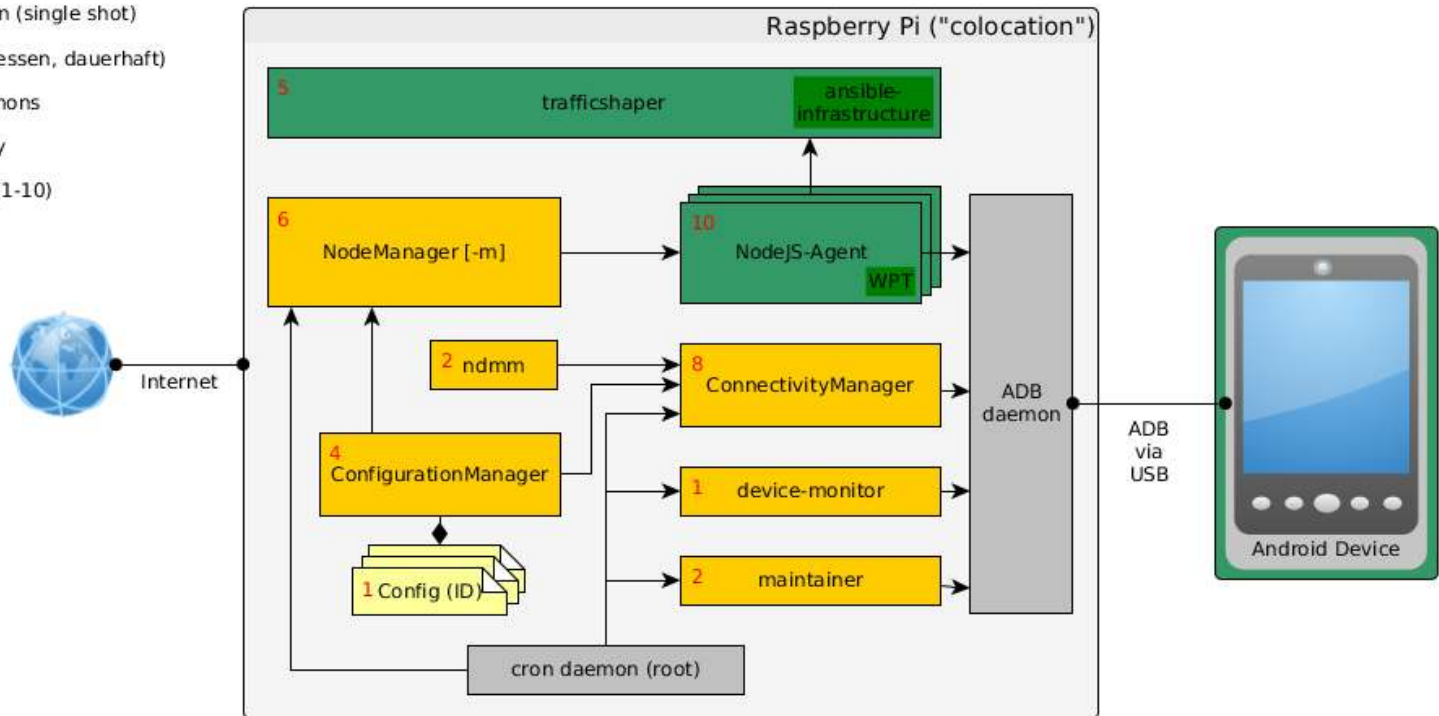
and sometimes out of control...



high effort to stabilize mobile measurements

Legende

- Anwendungen (single shot)
- Daemons (messen, dauerhaft)
- System Daemons
- git Repository
- 3 Komplexität (1-10)



LESSON LEARNED:

**exchange with community beyond code is
equally important**

- discussed the setup with different people
- new wptagent made with all our requirements

2018

support latest web perf metrics



22
AUG

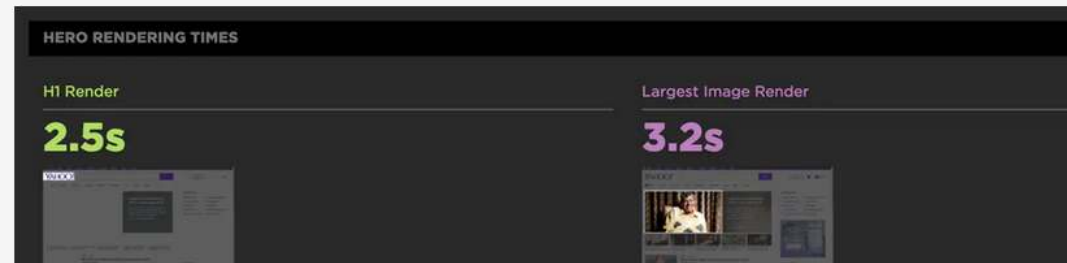
Tammy
Everts

Hero Rendering Times: New metrics for measuring UX

TUESDAY 22ND OF AUGUST 2017

The key to a good user experience is quickly delivering the content your visitors care about the most. That's not always easy to say, but tricky to do. Every site has unique content and user engagement goals, which is why measuring when critical content renders has historically been a challenging task.

That's why we're very excited to introduce Hero Rendering Times, a set of new metrics for measuring user experience. Hero Times measure when a page's most important content finishes rendering in the browser. These metrics are available right now to SpeedCurve users.



LESSON LEARNED:

**being able to benefit from other projects is
priceless**

- we could easily integrate features from others...
- ... and others could easily implement ours! 😊

2020



community engagement with OSM is still low

LESSON LEARNED:

**community doesn't come for free and needs
love**

WRAP UP

**without OSS we would still work on a web
performance level of 2012**

...and be probably out of web performance business

**it's not the lines of code contributed to *your*
project that count**

...but collaborating with the community

**you don't need to be a key player in web
performance to contribute**

...it is enough to share what you build because it is missing

iteratec.github.io/OpenSpeedMonitor/



@_sburnicki



@iteratec