

Exciting WebPagetest Scripting



Tobias Baldauf

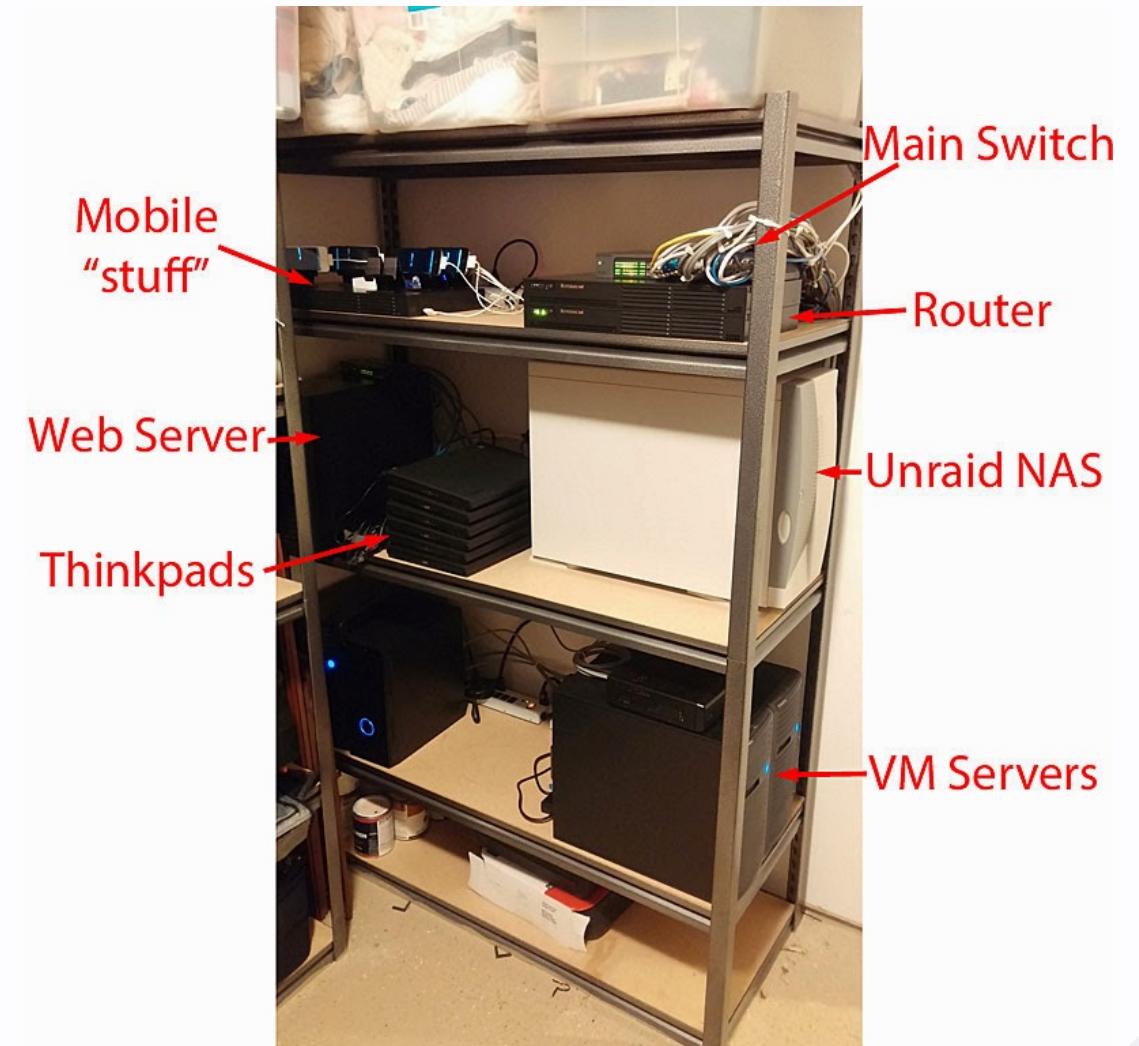
Web since 1999

Perf since 2011 at DECIX,
Akamai & trivago

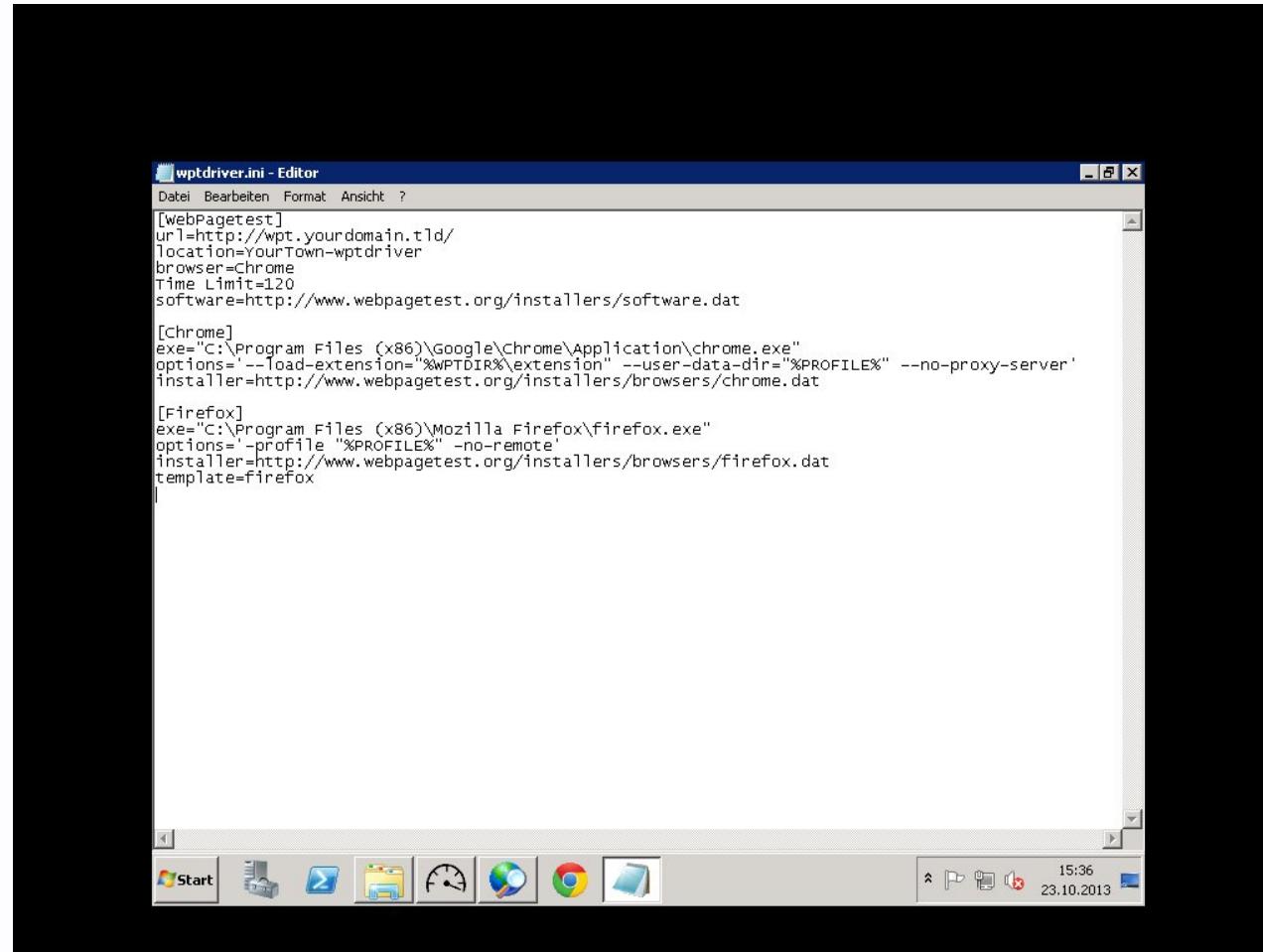
mail@tobias-baldauf.de - @tbaldauf@social.tchnics.de







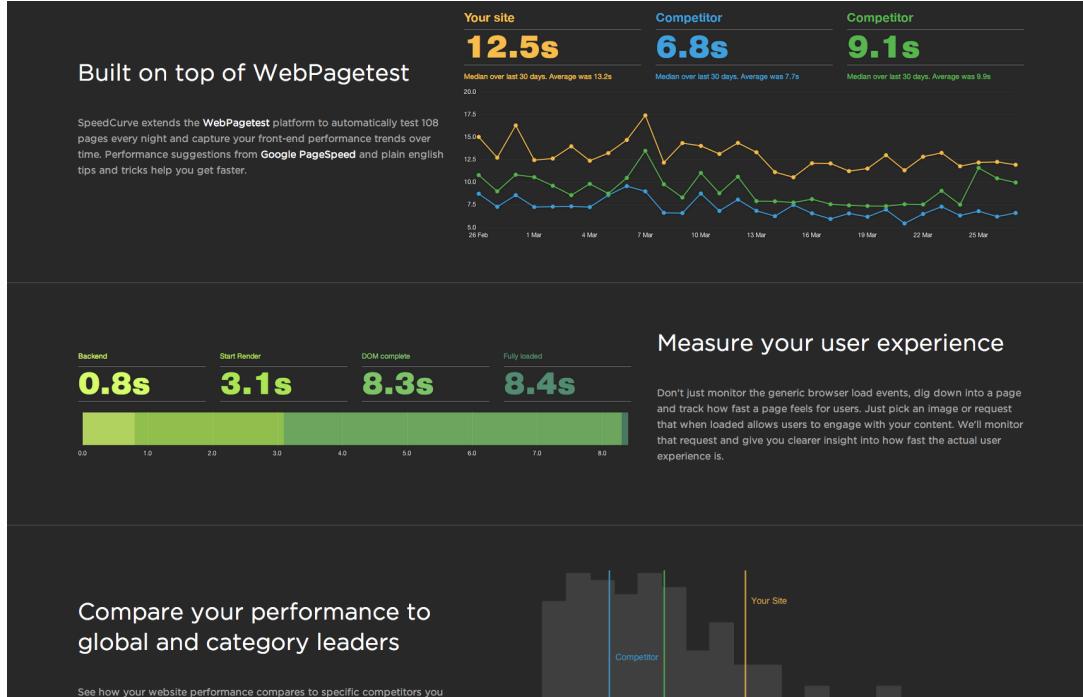
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Test a website's performance

The screenshot shows the 'Simple Testing' tab of the WebPagetest interface. At the top, there are four tabs: 'Advanced Testing' (selected), 'Simple Testing' (highlighted in blue), 'Visual Comparison', and 'Traceroute'. Below the tabs is a large input field labeled 'Enter a Website URL'. To the right of the URL field is a large yellow 'START TEST' button. Underneath the URL field, there are two dropdown menus: 'Test Location' set to 'Moto G (gen 1)' with a 'Select from Map' option, and 'Browser' set to 'Moto G - Chrome'. A 'Advanced Settings ▾' section is expanded, showing a tabbed navigation bar with 'Test Settings' selected (highlighted in grey), followed by 'Advanced', 'Chromium', 'Auth', 'Script', 'Block', 'SPOF', and 'Custom'. In the 'Test Settings' section, there are several configuration options: 'Connection' set to '3G Fast (1.6 Mbps/768 Kbps 150ms RTT)', 'Number of Tests to Run' set to 'Up to 9' with a value of '3' in the input field, 'Repeat View' with radio buttons for 'First View and Repeat View' (unselected) and 'First View Only' (selected), 'Capture Video' with a checked checkbox, and a note stating 'All test results are configured to be private by default.' There is also a 'Label' input field at the bottom.

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WebPageTest by catchpoint

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Lightning-Fast Web Performance

Online Course Learn to analyze performance, fix issues, and deliver fast websites from the start.

Free Start Course Now >

Start a Site Performance Test!

Enter a website URL...

Simple Configuration 3 test runs from recommended location and browser presets

MOBILE 4G Virginia, US

DESKTOP Cable Virginia, US

MOBILE 3G Mumbai, IN

Include Repeat View (Loads the page, closes the browser and then loads the page again)

Run Lighthouse Audit (Runs on Chrome, emulated Moto G4 device, over simulated 3G Fast connection)

Start Test →

How To Run It

Start a **Site Performance** **Test!**

<https://www.speedkit.com/>

Simple Configuration 3 test runs from recommended location and browser presets

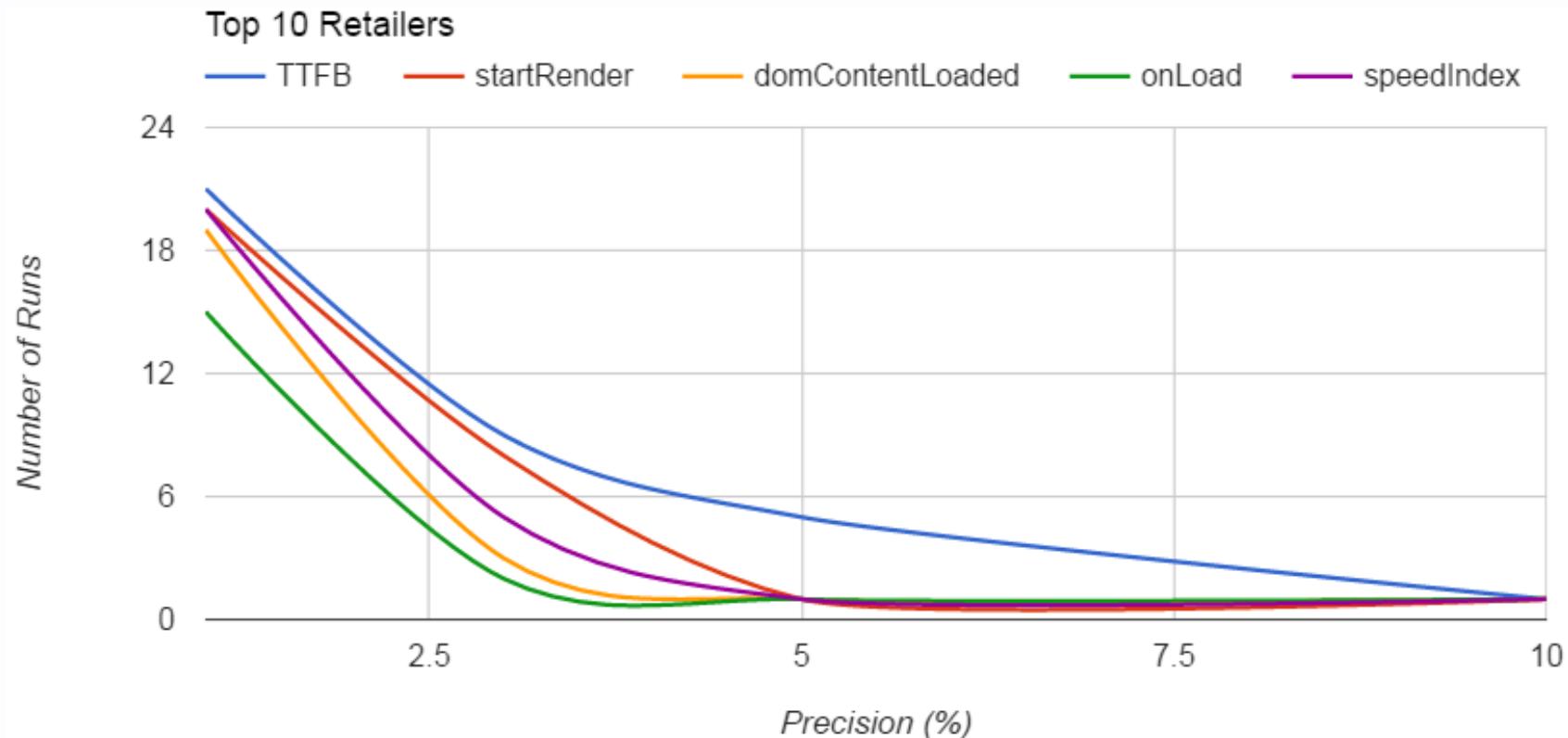
Advanced Configuration Choose from all browser, location, & device options

Test Location: Virginia - EC2

Browser: Chrome

Start Test →

Test Settings	Advanced	Chromium	Script	Block	SPOF	Custom
Connection: Cable (5/1 Mbps 28ms RTT)						
Desktop Browser Dimensions: default (1366x768)						
Number of Tests to Run: 3						
Repeat View: <input checked="" type="radio"/> First View and Repeat View <input type="radio"/> First View Only						
Label:						



SITES

A-Dealform-COM

A-Dealform-DE

A-Itemlist-COM

A-Itemlist-DE

A-Itemlist-DE-Slideout-Gallery

A-Itemlist-DE-Slideout-Overview

B-Dealform-DE-NoDNSAdsGTM

B-Itemlist-DE-NoDNSAdsGTM

Stable Baseline

```
// Custom User Agent: allowlist WPT traffic, trigger UA-dependent variant etc.
setUserAgent Mozilla/5.0 (Linux; Android 12) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/100.0.0000.00 Mobile Safari/537.36

# // Prevent UA string change
# speedcurve_removePTST 1

# // Clean Baseline: empty SSL certificate cache
# speedcurve_clearcerts 1

# // Authorize WPT to pass DDOS defense or similar auth mechanisms
# setHeader your-auth-key: your-auth-secret

# // Clean Baseline Efforts: pre-resolve DNS to avoid DNS perf fluctuations
# setDnsName %HOST% %HOSTR%

# // Clean Baseline Efforts: manually block 3rdParties, no 'blockDomainsExcept' allowlisting
# blockDomains www.googletagmanager.com doubleclick.net cdn.cookielaw.org

# // Appr. viewport of DPR2 WQHD+ laptop screen
# setViewportSize 1276 684

# // Actually navigate to the desired page for testing
# navigate %URL%

# // Log stuff
# exec console.log(window.yourObject)
# exec performance.mark('yourMark')
```

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```

LCPs & Viewports

```
# [...]
# // Appr. viewport of DPR2 WQHD+ laptop screen
# setViewportSize 1276 684

# // Average mobile viewport 2023
setViewportSize 412 771
# [...]
```

Lazy Loading

```
# [...]
# // 10x vertical viewport to force lazy-loaded contents
# setViewportSize 1276 6840

# Scroll viewport regularly to trigger lazy-loading
execAndWait window.setInterval('window.scrollBy(0,684)', 1000);
# [...]
```

Toggling A/B Tests

```
# [...]
# // A/B Bucket Assignment
setCookie %ORIGIN% yourCookie=someValue

# // Browser Feature Toggles
setHeader ACCEPT: image/avif

# Add Preconnect to critical 3rdParties
exec (function(){var e=[{href:"https://js.sentry-cdn.com"},{'href':'https://fonts.gstatic.com','crossOrigin':'anonymous'}],t=document.createDocumentFragment();for(let entry of e){var n=document.createElement("link");n.rel="preconnect",n.href=entry.href,entry.hasOwnProperty("crossOrigin")&&(n.crossOrigin=entry.crossOrigin),t.appendChild(n)}document.head.appendChild(t)}());
# [...]
```

SPA Soft Navigations

```
# [...]
// Disable data collection and open the desired page
logData 0
navigate      %URL%

// Wait for async resources to load (item rankings, 3rdparties etc)
sleep 15

// Reactivate data collection and then perform a click to trigger loading
logData 1
execAndWait document.querySelector('h2 > button').click()
```

Some Light Reading

- WPT Scripting Docs
- Book: Using WebPageTest
- Matt Hobbs on WPT
- Robin's Post on selfhosting WPT
- Speedcurve & Catchpoint
- baqend's WebPerf Blog



THANK YOU!

CN+D
Cartoon Network