

# User Interface Updates

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ADS Users Group Meeting, 20-21 Nov. 2019



# Areas of Concern From Last Year

- Slow initial loading speed
- Access for...
  - Crawlers
  - Non-JavaScript Users
  - Reference Managers (extensions, crawlers, etc.)

# Addressing Concerns

- Actual loading speed
  - Lazy-loaded assets
    - Load portions of the site only when needed
  - Route-based bundling
    - Pre-bundled assets that are only loaded if the route matches
  - Better caching, Content Delivery Networks (CDNs)
- Perceived loading speed
  - Loading bar
    - Delay showing (Better for fast connections/computers)
    - Updated messages
  - Pre-rendered abstract pages
    - Main part of page is loaded on the server and re-hydrated later

# Statistics on Loading Speed

- Payload size and number of requests

- Before Lazy loading and bundling:

76 requests	2.4 MB transferred	3.4 MB resources	Finish: 1.66 s	DOMContentLoaded: 264 ms	Load: 329 ms
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- Current:

57 requests	1.1 MB transferred	3.0 MB resources	Finish: 1.66 s	DOMContentLoaded: 247 ms	Load: 334 ms
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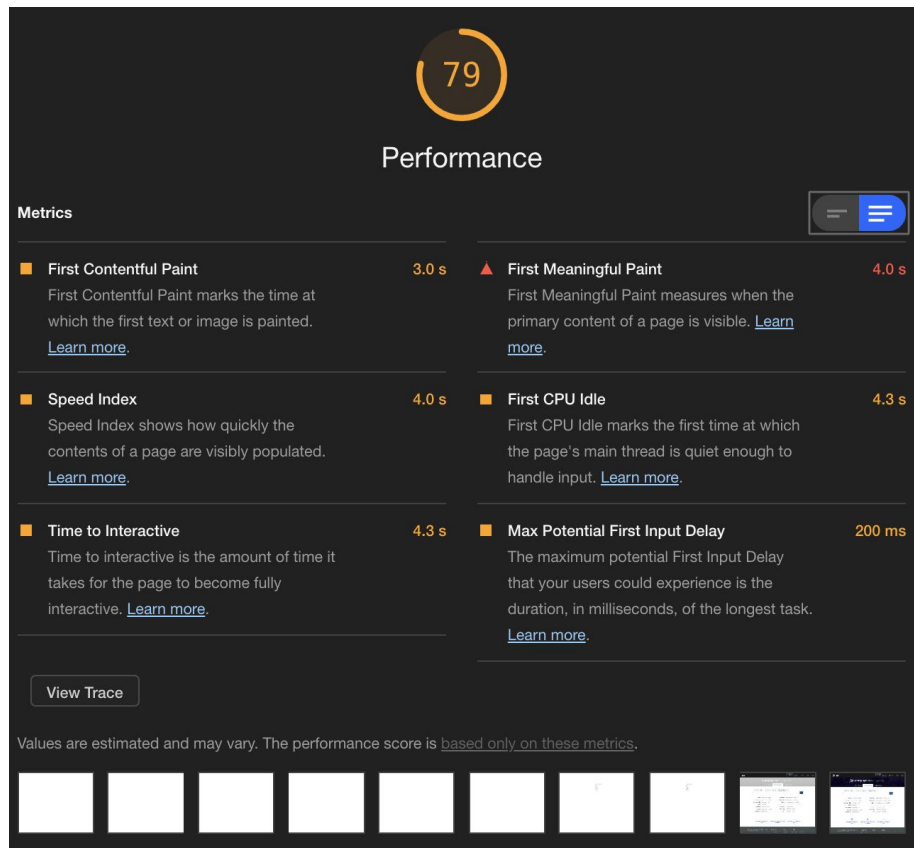
\* Same computer, no network throttling

- Around 42% fewer requests after lazy loading
- Averaging around 25% smaller payloads by using optimized bundling

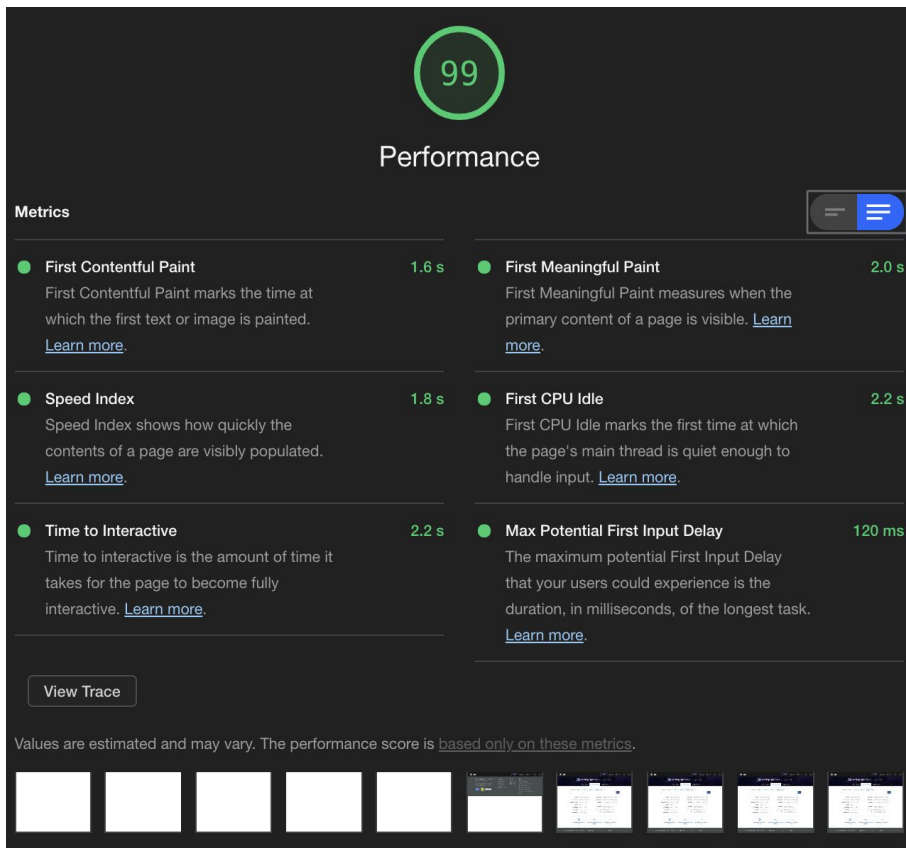
- Timings

- Google Chrome's Lighthouse report

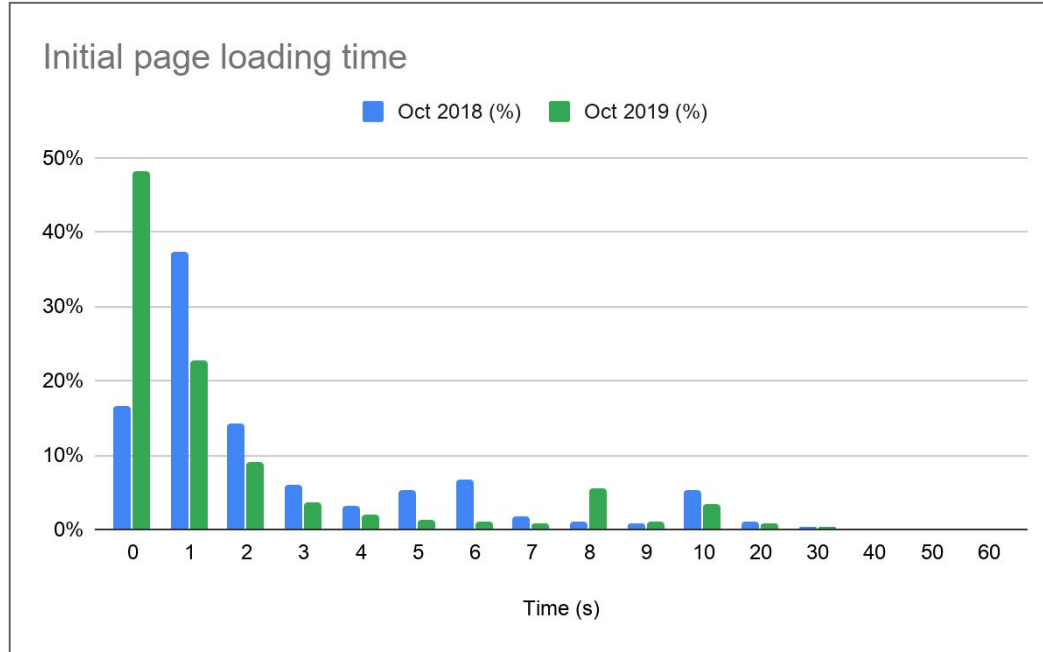
# Before



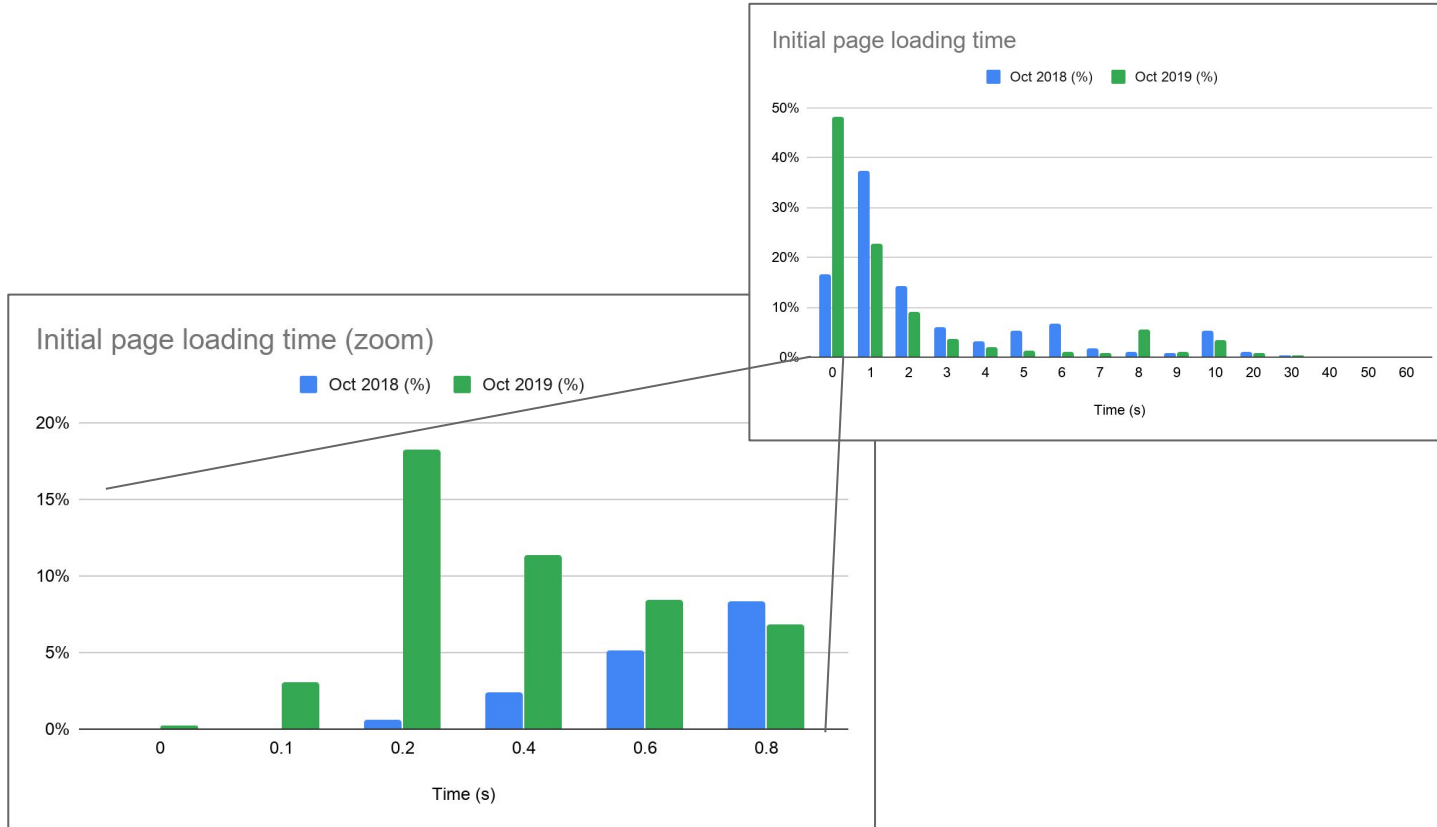
# Current



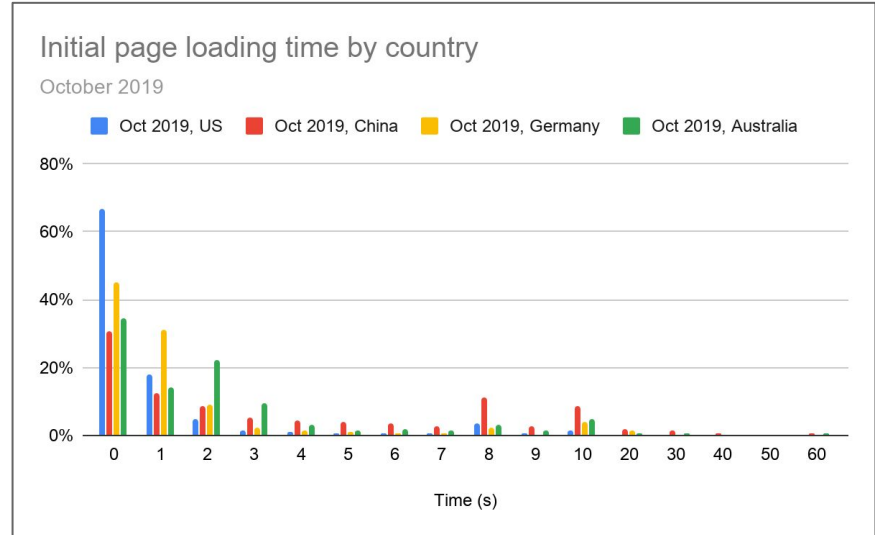
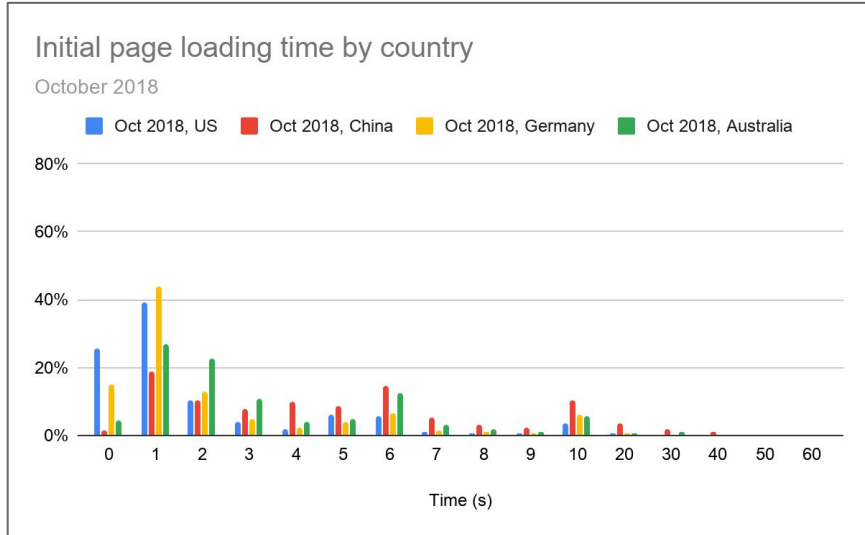
# Initial page load time, 2018 vs. 2019



# Initial page load time, 2018 vs. 2019

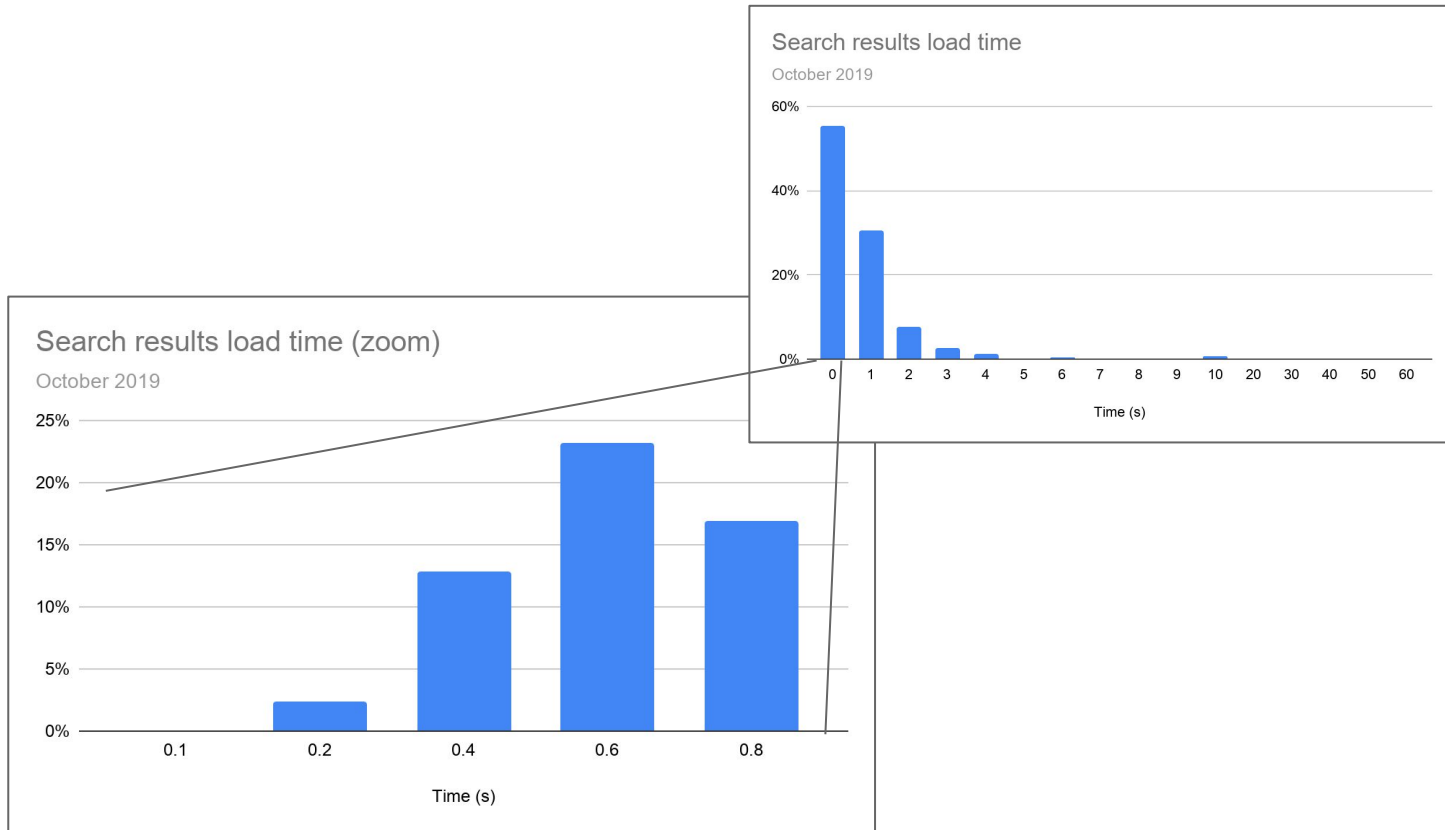


# Initial page load time by country

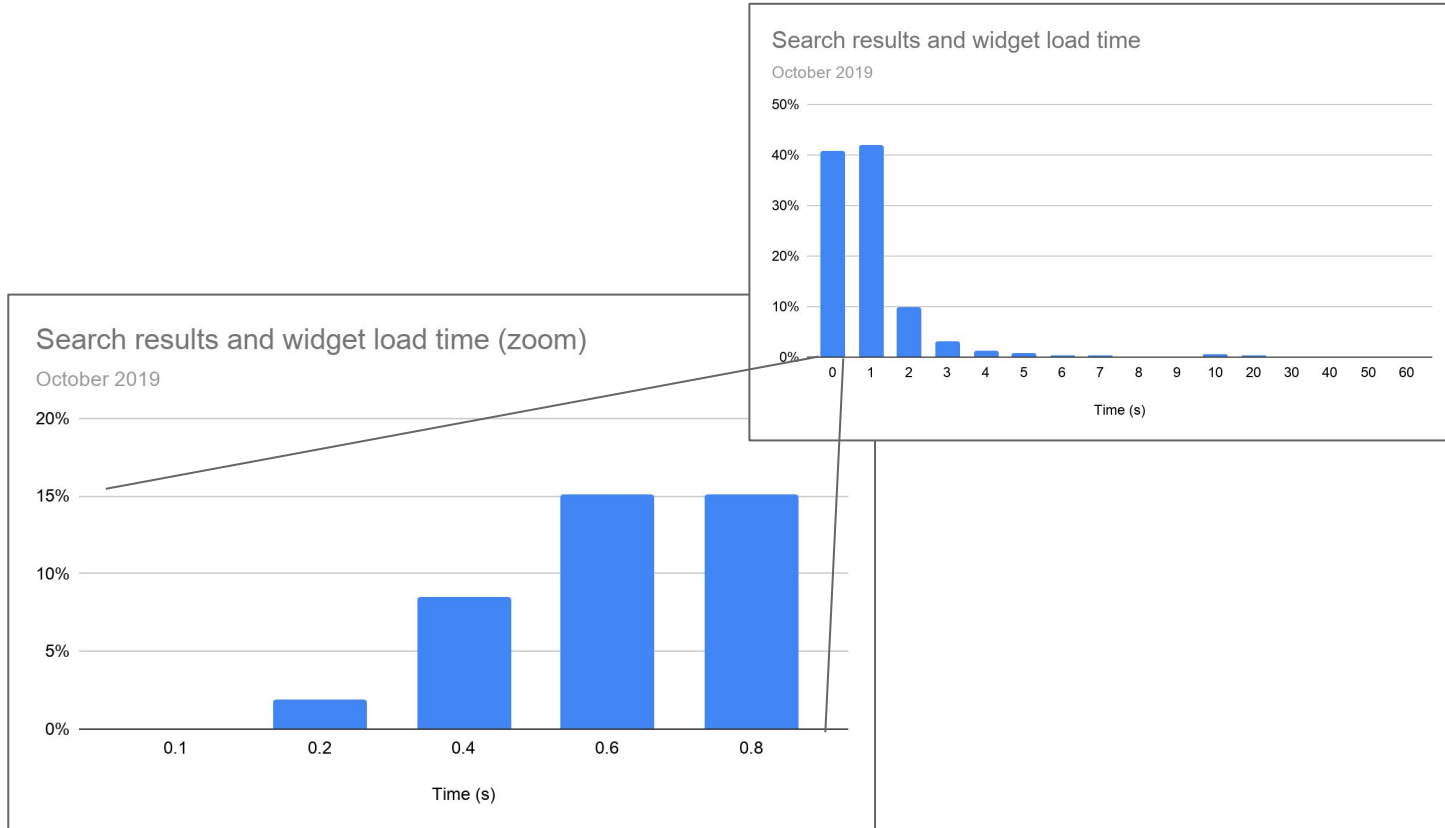




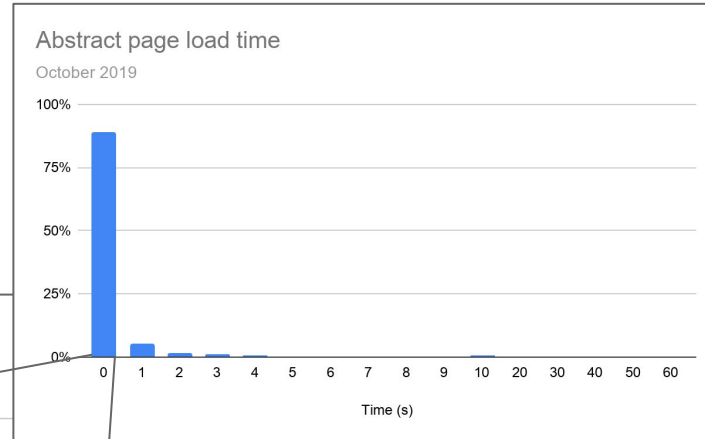
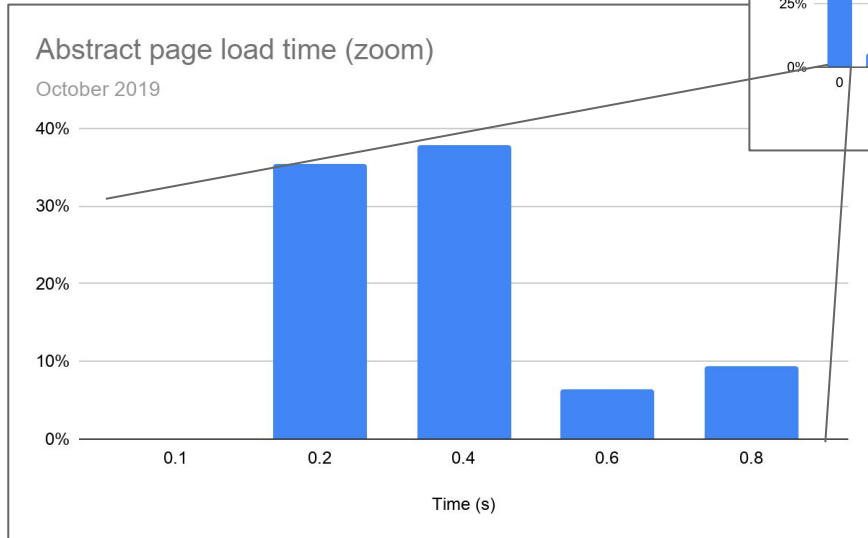
# Search results load time (median: <1s)



# Search results + widget load time (median: ~1s)



# Abstract page load time (median: < 0.5s)



# Access using “Basic HTML” UI

- Server-rendered pages
  - As opposed to the current dynamic pages
- Near instant loading times for users
  - No loading since requests for results is made server-side and inserted in templates
- Metadata available for crawlers, reference managers, etc.
  - SEO improvements
- Dynamic content loaded via page “hydration”
  - Static HTML is hydrated by JavaScript injection, loading extra functionality when ready
- No JavaScript dependency
- Better mobile experience
- No user accounts, ORCID, libraries, etc.





# Enhancements Since Last Year

- Cleaner URLs
  - Got rid of '#' routes
  - Helped with transition, hash-routes don't work server-side
- Second order operations
  - In the "Explore" menu
  - "Limit to" button
- Classic parity
  - Reference resolver (paper form)
  - Library set operations

QUICK FIELD: Auth

docs(49f836345574ff8f27cd640c28c0c5bd)

star

Your search returned 3 results

Your search returned

Date



Show highlights

Show abstracts

Hide Sidebars

Go To Bottom



1 2020CNSNS..8205014M 2020/03



Modeling excitability in cerebellar stellate cells: Temporal changes in threshold, latency and frequency of firing

Mitry, John; Alexander, Ryan P. D.; Farjami, Saeed; Bowie, Derek and 1 more



2 2020Chmsp.242l4959T 2020/03



Autophagic-CTSB-inflammasome axis modulates hepatic stellate cells activation in arsenic-induced liver fibrosis

Tao, Ye; Qiu, Tianming; Yao, Xiaofeng; Jiang, Liping and 11 more



3 2020APh...11602386A 2020/03



The advanced Virgo longitudinal control system for the O2 observing run

Acernese, F.; Agathos, M.; Aiello, L.; Allocca, A. and 330 more

Per Page

25

prev

1

of 1

next

Export

Explore

clear all

limit to

ers to library

ations Reads

non refereed



# Library Operations

Select an Action

Select an Action

Union  Intersection  Difference  Copy  Empty



Take the union of the source and the secondary libraries. This finds all records contained in any of the input libraries. The result is saved to a new library

Source Library

Source

4



New Union Lib

12

owner

Union of libraries testing, Untitled Library 1 (IDs:  
nBNfpxPUSyyUTYR6j2BPRg,  
d9O0aqd2SreUVeK67XX8rw)

Secondary

Untitled

New Library Name

New Union Lib

Submit

Operation Completed Successfully

[New Union Lib](#) created

# Future Work / Challenges

- Site still using outdated JS framework/libraries
  - Refactoring still planned
  - Progressive enhancement
- Accessibility / usability issues
  - Work still needs to be done to upgrade areas
  - Harvard Web Publishing

# Refactor / Update

- Current approach: progressive enhancement
  - All new features written in modern framework
  - Each area of site slowly transitioned to new code
  - Clean up and modularize current structure
  - Changes happen gradually
- Future plan: refactor
  - Use current technology, start from scratch if necessary
  - Users would be changed over to new interface when ready
  - Able to redesign and implement newer frameworks more easily
  - More rapid changes
- Challenges
  - Lack of additional UI / UX developer extra effort

# Accessibility / usability issues

- Accessibility

- Continued work to update problem areas
  - Updating color palettes, dark/light mode, etc.
- New features written to have better accessibility
- Updated heading structure, link titles/aria-\* attributes, image alt tags, etc.

- Usability

- Harvard Web Publishing
  - Contract-basis to help with design work
  - Part of feedback loop for future feature designs
  - Help to convert user feedback into actionable changes on the UI

Questions?