Esbuild

An extremely fast bundler for the web

src: ./pages/about.md hide: false

Summary

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What is esbuild?

It is an extremely fast JavaScript and CSS bundler and minifier. Current build tools for the web are 10-100x slower than they could be.The main goal of this project is to bring about a new era of build tool performance, and create an easy-to-use modern bundler along the way

- It developed by Evan Wallace, creator of Figma
- Written in Go
- First release: 2020
- 37.4k stars sur Github

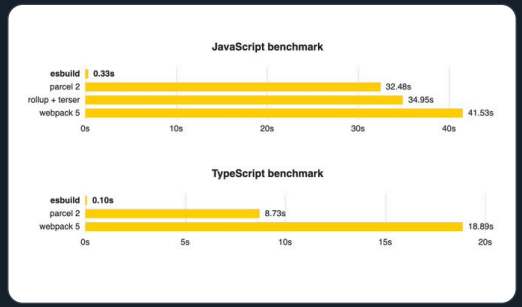
Major features

- Extreme speed without needing a cache
- JavaScript, CSS, TypeScript, and JSX built-in
- An API for CLI, JS, and Go
- Plugins
- Bundles ESM and CommonJS modules
- Bundles CSS including CSS modules
- Tree shaking, minification, and source maps
- Local server, watch mode, and plugins

Benchmark

Evan Wallace | @evanw@hachyderm.io
@evanwallace · **Follow**

Huge congrats to the Parcel team for such a big release! I updated esbuild's benchmark results again now that Parcel 2 has come out of beta. The latest release of Parcel 2 is even faster than the beta version and is now faster than Rollup + Terser:



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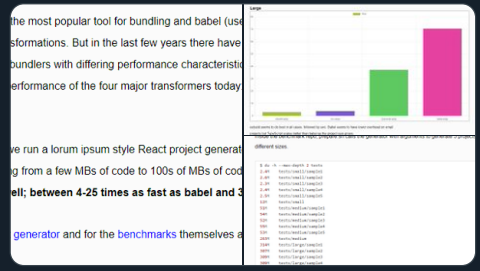
Ever been curious about the performance of newer JavaScript transformation tools like esbuild and swc compared to babel and TypeScript?

esbuild and swc lead the pack by a large margin.

datastation.multiprocess.io/blog/2021-11-1...



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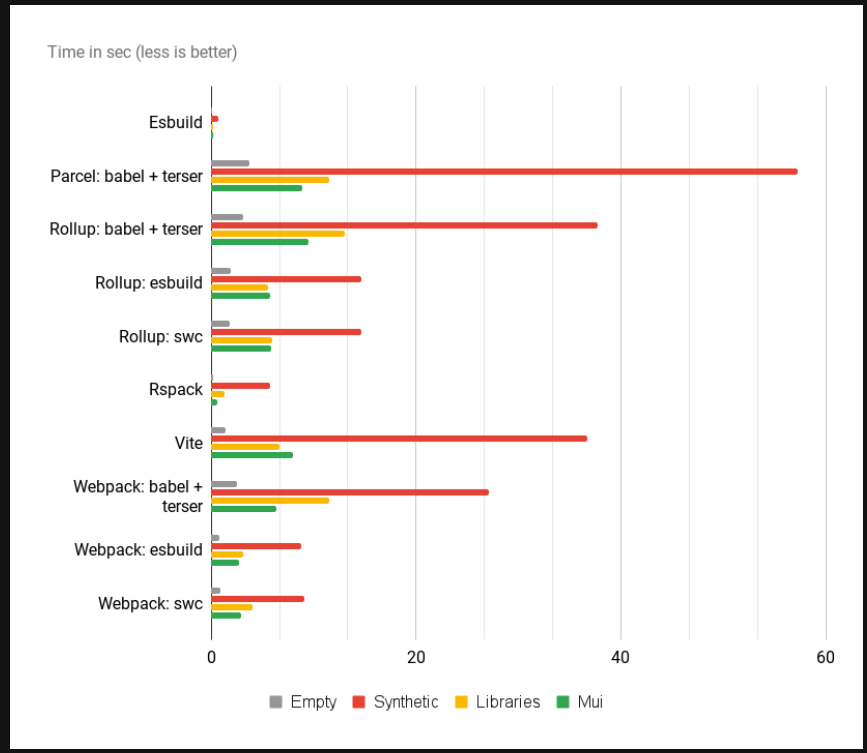
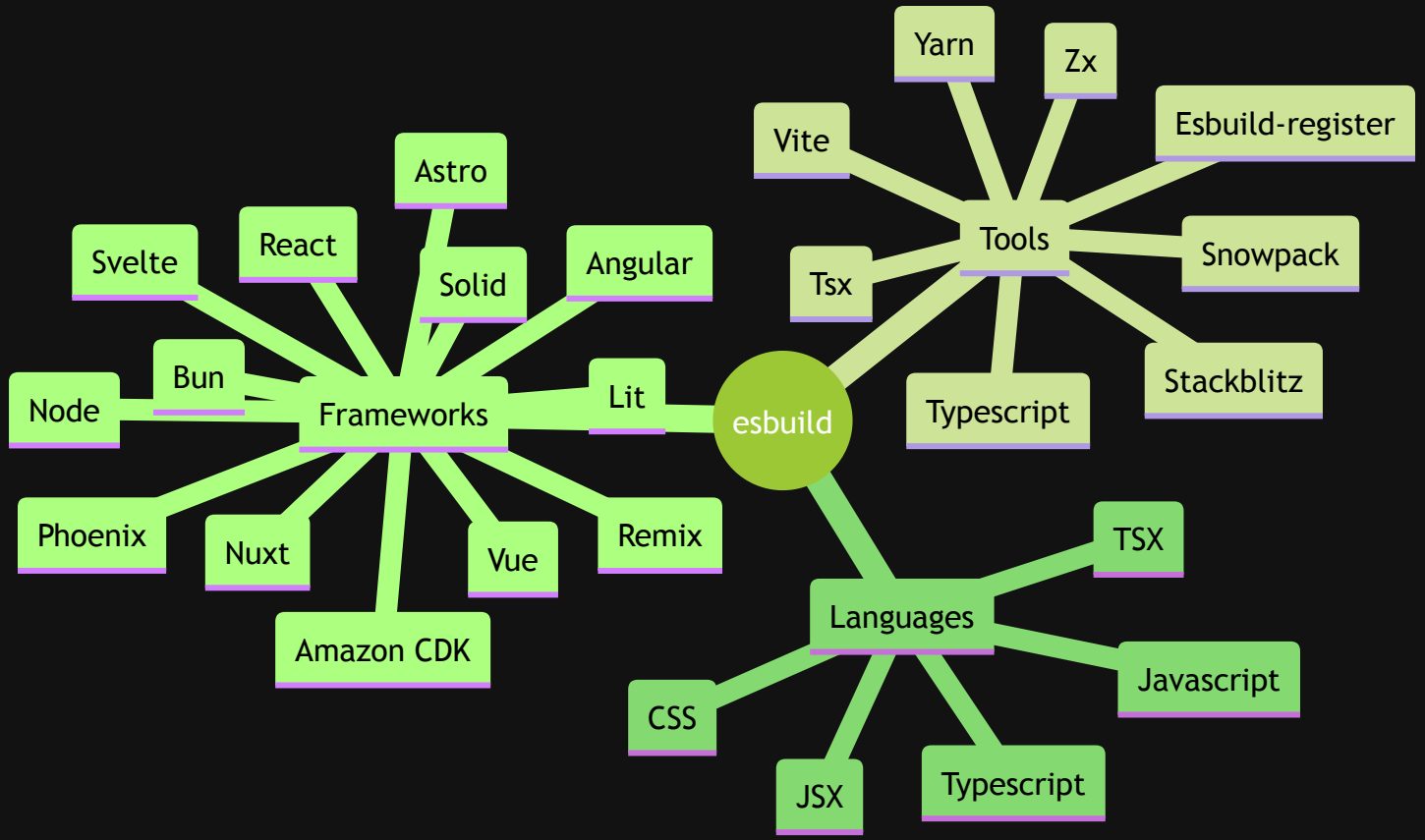
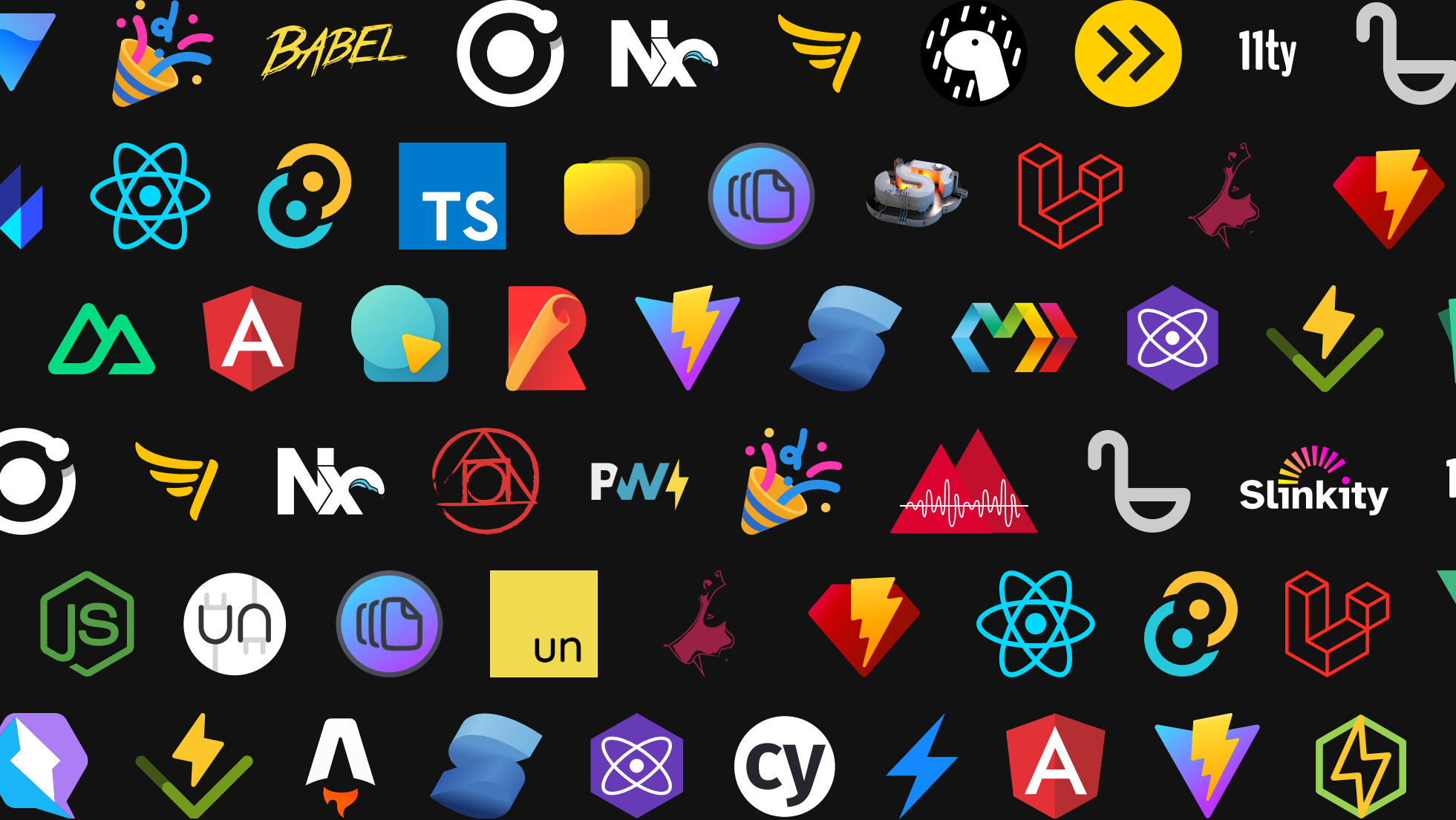
Performance benchmark for most popular javascript bundlers in various configurations

	Empty	Libraries	Mui	Synthetic
Esbuild	0.046	0.142	0.192	0.685
Parcel: babel + terser	3.737	11.529	8.892	57.232
Rollup: babel + terser	3.121	13.056	9.495	37.689
Rollup: esbuild	1.874	5.553	5.746	14.612
Rollup: swc	1.788	5.966	5.802	14.644
Rspack	0.192	1.308	0.607	5.730
Vite	1.418	6.632	7.957	36.735
Webpack: babel + terser	2.471	11.529	6.406	23.889
Webpack: esbuild	0.808	3.145	2.665	8.798
Webpack: swc	0.849	4.033	2.927	9.134



Who use esbuild?




BABEL
11ty
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Why is it fast?

- It’s written in Go and compiles to native code
- Parallelism is used heavily
- Everything in esbuild is written from scratch
- Memory is used efficiently

Each one of these factors is only a somewhat significant speedup, but together they can result in a bundler that is multiple orders of magnitude faster than other bundlers commonly in use today

A quick start

CLI mode

```
# Install
npm add -D esbuild

# Add build command to package.json

"scripts": {
  "build-dev": "esbuild src/index.ts --bundle --platform=node --outfile=dist/index.js --format=esm --target=es2022",
  "build": "tsc --noEmit && build-dev",
  "watch": "esbuild src/index.ts --bundle --watch --platform=node --outfile=dist/index.js --format=esm --target=es2022"
}

--bundle indicates that it should output only one file containing our entire bundle.
--platform=node indicates that it should bundle for Node.js.
--outfile=dist/index.js indicates that it should output the bundle to dist/index.js.
--format=esm indicates that it should use ES Modules for imports and exports.
```

Learn more about the build options

Scripts mode

Build script

```
import esbuild from'esbuild'
import fp from 'fast-glob'

const entryPoints = fg.sync(['src/\*_/_.[tj]s'])

esbuild
.build({
  entryPoints,
  outdir: 'dist',
  platform: 'node',
  sourcemap: true,
  target: 'es2022',
  format: 'esm',
})
.catch(() ⇒ process.exit(1))
```

An Extremely Simple React Starter Kit

Minimal React template

```
# Project structure
src/
├─ components/
│ ├─ app.module.css
│ └─ app.tsx
├─ index.html
├─ index.tsx
├─ livereload.js
├─ style.css
└─ types.d.ts

# livereload.js

new EventSource("/esbuild").addEventListener("change", () => location.reload());

# dev server command

esbuild src/index.html src/index.tsx \
 --loader:.html=copy \
 --outdir=build --bundle --watch \
 --servedir=build --serve-fallback=src/index.html \
 --inject:src/livereload.js
```

Thanks

- Documentations
- Github Esbuild
- Benchmark:
  - https://esbuild.github.io/faq/#benchmark-details
  - https://github.com/s1owjke/js-bundler-benchmark
- An extremely simple React starter kit
- Examples talks with sli.dev