webpack

THE PAST
THE PRESENT
THE FUTURE

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THE PAST

Problems bundler solve

A short webpack History lesson

PROBLEMS BUNDLERS SOLVE
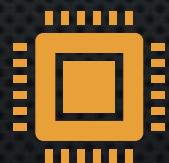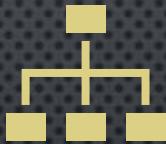
- SCRIPT TAGS
  - GLOBAL SCOPE
  - IIFE
- MODULE FORMATS
  - AMD (RUNTIME, BOILERPLATE, MANY REQUESTS)
  - COMMONJS (SYNC DEPENDENCIES)
  - UMD (AMD + COMMONJS + GLOBAL)
  - ECMASCRIPT MODULES (MANY REQUESTS)
  - COMBINING THOSE ⬆, OPTIMIZING

```
<script>
    window.jQuery = …;
    !function() { … }()
```

```
define(["dep"],
function(dep) { … });

const dep = require("dep");
module.exports = …;

import dep from "dep";
export { … }
```

PROBLEMS BUNDLERS SOLVE

- No shared dependencies graph
  - disconnect between JS, CSS, other Assets
  - content hashing, Inlining
- Concatenating all JS/CSS is unsuitable for large Application
  - Initial Load Time is important
- Save → Build → Reload Workflow is slow
- Using new technologies in old browser (e. g. EcmaScript Modules)
- Hiding source code structure

PROBLEMS WEBPACK SOLVES

- ASSUMPTION: EVERY BUILD IS DIFFERENT
- CUSTOMIZING/EXTENDING YOUR BUILD
  - MANY CONFIGURATION OPTIONS
- EXTENDING YOUR BUILD
  - LARGE PLUGIN INTERFACE
  - RICH PLUGIN ECOSYSTEM

2012

- FEB 2012
  - PROPOSED CODE SPLITTING TO MEDIKOO/MODULES-WEBMAKE
  - IMPLEMENTED POC BUNDLER WITH CODE SPLITTING
- NEW OPEN SOURCE PROJECT SOKRA/MODULES-WEBPACK

- SOME EARLY USES
- LOT OF FEEDBACK, IMPROVEMENTS

2013

- Oct 2013
  - instagram.com evaluating webpack as bundler

- Dec 2013
  - Beta version of webpack 1

2014

- July 2014
  - Pete Hunt (instagram.com)
    OSCON talk about their build stack
    - promoting webpack
    - https://www.youtube.com/watch?v=VkTCL6Nqm6Y

- Feb 2014
  - webpack 1 released

2015

- Nov 2015
  - Beta version of webpack 2
  - New documentation by its own team
    - https://github.com/webpack/webpack.js.org
  - Tree Shaking

2016

- Jun 2016
  - Sean organized us in a Core Team

- Oct 2016
  - Joined JS Foundation (later renamed to OpenJS Foundation)
  - Joined Open Collective

2017

- Jan 2017
  - Split webpack and webpack-contrib organizations
  - webpack 2 released (2 years + 11 months after webpack 1)
  - New logo

- Apr 2017
  - I went full-time webpack

Sponsor webpack:
https://opencollective.com/webpack

Sponsor me:
https://github.com/sponsors/sokra

2017

- Jun 2017
  - webpack 3 released (5 months after webpack 2)
  - Experimental Scope Hoisting

- Aug 2017
  - trivago started sponsoring with $10k/month

2018

- FEB 2018
    - webpack 4 released (6 months after webpack 3)

- DEC 2018
    - Alpha version of webpack 5

2019

- Oct 2019
  - Beta version of webpack 5

- Now
  - 1 year + 9 months into webpack 4
 - webpack 5 on the horizont
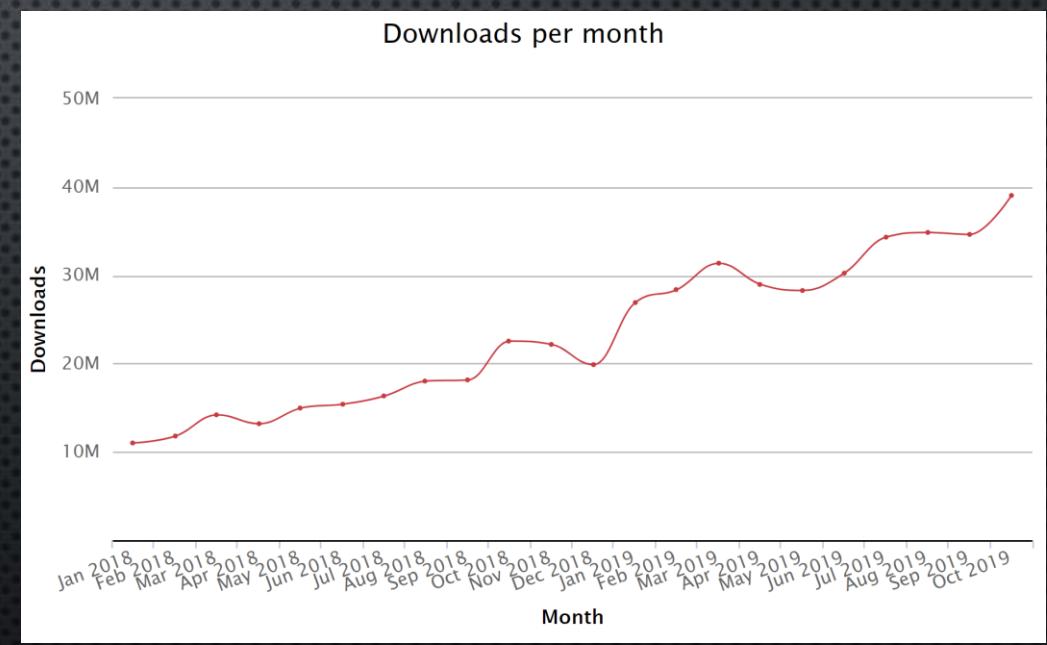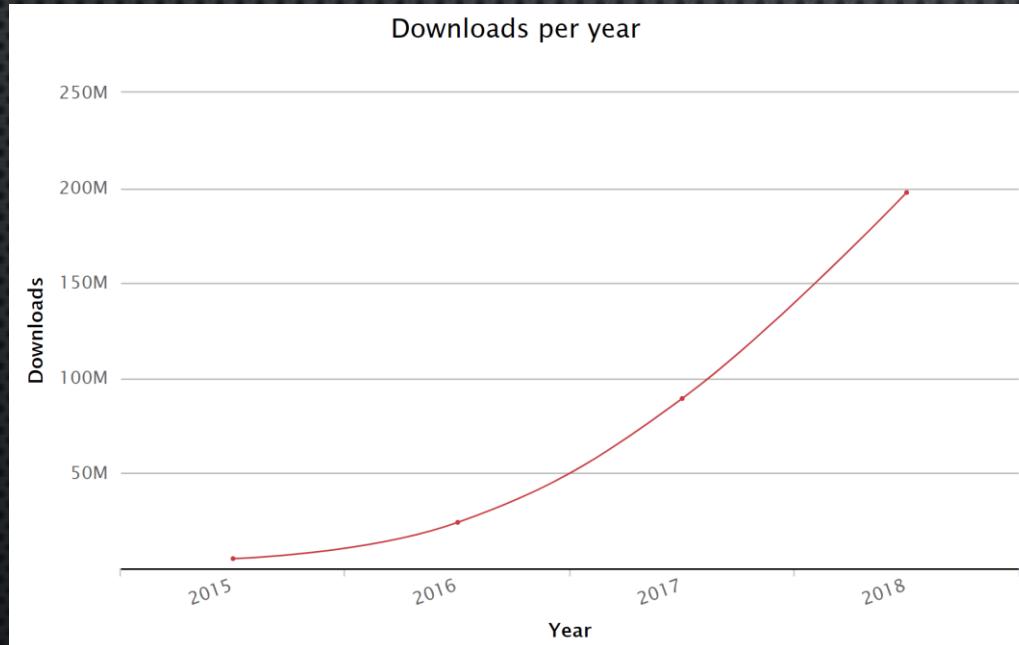
THE PRESENT

WEBPACK STATISTICS

WEBPACK 5 IS COMING

NPM DOWNLOADS

Downloads per year

Downloads per month
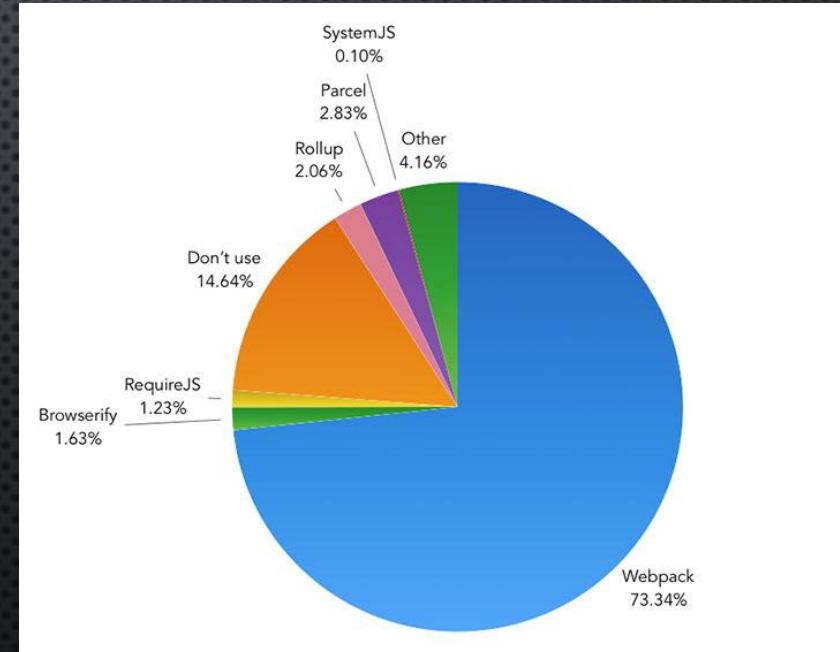
THE FRONT-END TOOLING SURVEY 2019

Do you use a JavaScript module bundler in your workflow?

Module Bundler	Number of Votes	Percentage	% Diff (to 2018)
Webpack	2,204	73.34%	+7.66%
I don't use a module bundler	440	14.64%	-5.91%
Parcel	85	2.83%	+1.79%
Rollup	62	2.06%	-0.12%
Browserify	49	1.63%	-2.09%
RequireJS	37	1.23%	-1.32%
SystemJS	3	0.10%	N/A
Other (please specify)	125	4.16%	+0.15%
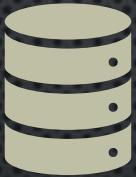
CONTRIBUTIONS AND COMMUNITY ACTIVITY

Activity	2019-09	2019-10	2019-11
Issues comments	950	1257	888
PR comments	668	1004	986
Commits	511	590	547
PR closed	232 – 24	271 – 24	247 – 31
PR submitted	204	260	239
PR merged	157	205	166
Issues closed	185 – 13	180 – 7	128 – 8
Issues submitted	141	145	140

WEBPACK 5 BETA: NEW FEATURES

Persistent Caching

Speeds up build startup

Experiments

Relax SemVer compatibility

Top level await

Asset module type

Yarn PnP support

WEBPACK 5 BETA: IMPROVEMENTS

IMPROVED TREE SHAKING

Module level symbol tracking

namespace/JSON object tracking
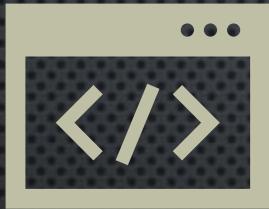
RUNTIME CODE GENERATION

ES2015 code generation

Only includes code needed by application
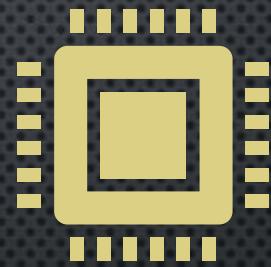
WATCHING SEES MORE BUILD-AFFECTING CHANGES

WEBPACK 5 BETA: CHANGES

No longer focus on node.js compatibility
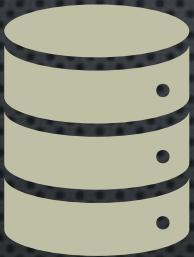
no node.js built-in module polyfills

New Specs

JSON Modules

(Experiment) New WebAssembly Modules

WEBPACK 5 BETA: USABILITY

EASE OF USE FOR LONG TERM CACHING

Deterministic by default

IMPROVED NAMES FOR DEBUGGING

WEBPACK 5 BETA: EXTENSIBILITY

Support Plugins for Stats JSON and Text Format

Runtime Modules for runtime code
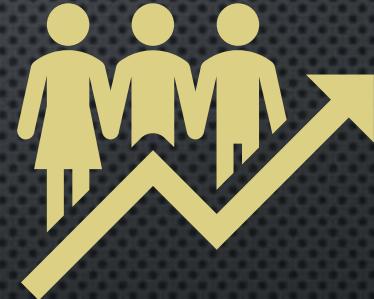
THE FUTURE

W<small>HERE IS WEBPACK HEADING TO</small>?

WEBPACK SHOULD BE
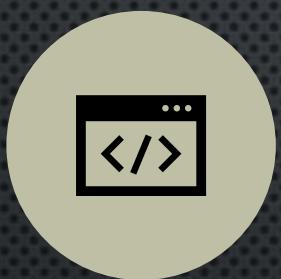
a web app optimizer   a help for development
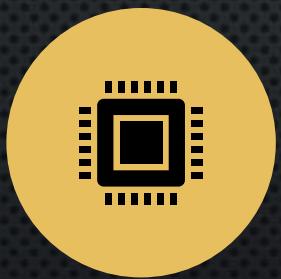
WEBPACK SHOULD BE A WEB APP OPTIMIZER

support native web apps and optimize them

minimize webpack-specific syntax or make it optional (hint)

follow latest specs e. g. for HTML, CSS, JSON, WASM integration

Integrate with more technologies: WebWorker, ServiceWorker, Workflets

# WEBPACK SHOULD BE A HELP FOR DEVELOPMENT

safe to use, stable while using
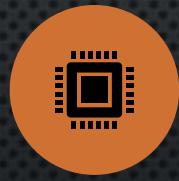
improve debugging experience

improve build speed, especially incremental

integrate with pre and post processors, other languages

allow to use new technologies in all (old) browsers

allow to adapt to custom needs

THANKS 💛

🥰 https://github.com/sokra/slides