

# React: The Big Picture

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**Cory House**

@housecor | reactjsconsulting.com



# Course Outline



**Why React?**



**Tradeoffs**



**Why not React?**



# Agenda



History

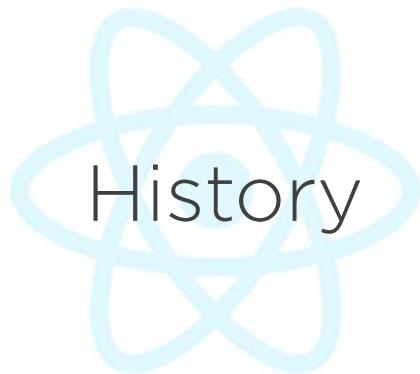
Why React?



# History

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- 2011    Created by Facebook
- 2012    Used on Instagram
- 2013    Open sourced
- 2014    Embraced by many large companies
- 2015    React Native released
- 2016    React 15 released  
(previous version was 0.14)
- Today    Over 30k components at Facebook  
Full-time dev staff  
Used by many in Fortune 500



# Why React?



# Why React?

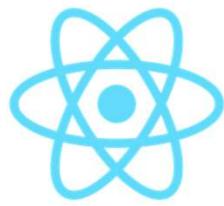
- Flexibility
- Developer experience
- Corporate investment
- Community support
- Performance
- Testability



# 1

## Flexibility





React



Angular



Ember

Opinion →



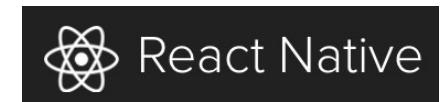
# Where Can I Use React?



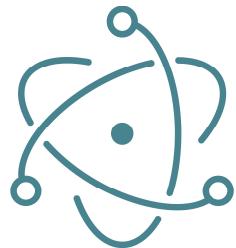
Web apps



Static sites



Mobile



Desktop

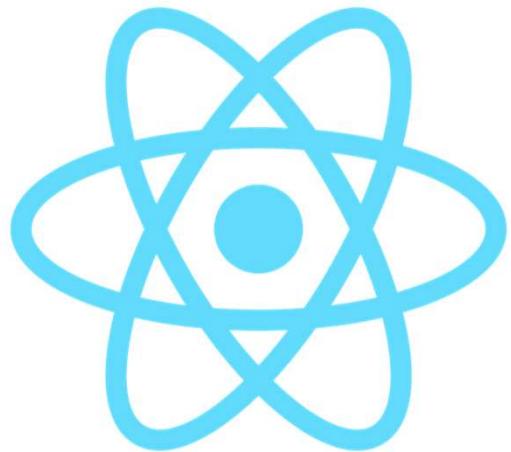


Server-rendered



Virtual Reality





Learn once, write everywhere



# React Renderers



**react-dom**



**react-native**



**react-vr**



## Web (+ NW & Electron)

---

- [react-dom](#) - A declarative, efficient, and flexible JavaScript library for building user interfaces.
- [react-art](#) - React Bridge to the ART Drawing Library.
- [react-canvas](#) - High performance canvas rendering for React components.
- [react-three](#) - React bindings to create and control a 3D scene using three.js.
- [React-GL](#) - Render React components in WebGL for 60 FPS animations.
- [ReactLiberty](#) - Connect, discover, be free to choose between WebGL / Canvas (PIXI) / DOM or any other UI renderer.
- [react-vr](#) - Render React components in WebGL/WebVR for VR apps.
- [react-konsul](#) - A react renderer that renders to the browser's devtools console.
- [react-worker-dom](#) - Experiments to see the advantages of using Web Workers to Render React Virtual DOM.
- [rax](#) - A universal React-compatible render engine.

## Mobile

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- [react-native](#) - A framework for building native apps with React.
- [react-titanium](#) - React custom renderer for Appcelerator® Titanium™ SDK.

## Command Line Interface

---

- [react-blessed](#) - A react renderer for blessed.
- [ink](#) - React for interactive command-line apps

[github.com/chentsulin/awesome-react-renderer](https://github.com/chentsulin/awesome-react-renderer)

# Server-side Rendering

`ReactDOMServer.renderToString()`



# Server-side Rendering



Next



Gatsby



Phoenomic



Existing app?  
Sprinkle React in.





What do you want to learn?

Cory

housecor@gmail.com



...



Cory House

Pluralsight Author

✓ Following

440 Followers

Cory is an independent consultant with over 15 years of experience in software development. He is the principal consultant at [reactjsconsulting.com](http://reactjsconsulting.com) and a Microsoft MVP. As a software architect at Cox Automotive, Cory creates web applications for the automotive industry using C#, .NET, Node, and Java...

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COURSES AUTHORED

8

All time

TOPICS AUTHORED



javascript

TOTAL RATINGS

6,806

AVG COURSE RATING

4.7

Step 1: Replace the star rating with a React component

Courses by Cory

### Creating Reusable React Components

by Cory House

Intermediate

6h 21m

05 June 2017

★★★★★ (47)

### Building a JavaScript Development Environment

by Cory House

Beginner

5h 19m

10 November 2016

★★★★★ (351)

### Building Applications with React and Redux in ES6

by Cory House

Intermediate

6h 14m

20 May 2016

★★★★★ (884)

### Building Applications with React and Flux

by Cory House

Intermediate

5h 8m

12 August 2015

★★★★★ (1093)



What do you want to learn?

Cory

housecor@gmail.com



...



Cory House

Pluralsight Author

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Cory is an independent consultant with over 15 years of experience in software development. He is the principal consultant at [reactjsconsulting.com](#) and a Microsoft MVP. As a software architect at Cox Automotive, Cory creates web applications for the automotive industry using C#, .NET, Node, and Java...

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Step 2: Replace each course list item with React

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### Creating Reusable React Components

by Cory House

Intermediate

6h 21m

05 June 2017

(47)

### Building a JavaScript Development Environment

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Beginner

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6h 14m

20 May 2016

(884)

### Building Applications with React and Flux

by Cory House

Intermediate

5h 8m

12 August 2015

(1093)



What do you want to learn?

## Step 3: Replace author page with React

Cory  
ousecor@gmail.com



...



Cory House   
Pluralsight Author

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javascript

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Intermediate

6h 21m

05 June 2017

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 (351)

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by Cory House

Intermediate

6h 14m

20 May 2016

 (884)

### Building Applications with React and Flux

by Cory House

Intermediate

5h 8m

12 August 2015

 (1093)

# Broad Browser Support



# 2 Developer Experience





The React API fits here.

You'll rarely use the docs.



```
import React from 'react';

function HelloWorld(props) {
  return <div>Hello {props.name}</div>
}


```



```
import React from 'react';

class HelloWorld extends React.Component {
  render() {
    return <div>Hello {props.name}</div>
  }
}
```



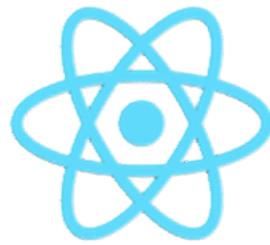
# JSX Compiles to JS

```
<h1 color="red">Heading here</h1>
```



```
React.createElement("h1", {color: "red"}, "Heading here")
```





## “JS” in HTML

```
<div *ngFor="let user of users">  
<div v-for="user in users">  
{{#each user in users}}
```

## “HTML” in JS

```
{users.map(createUser)}
```





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# CODESANDBOX

ONLINE WEB APPLICATION EDITOR

REACT EDITOR

VUE EDITOR

PREACT EDITOR

SEARCH FOR A SANDBOX

IMPORT FROM GITHUB



CodeSandbox makes it easier to create, share and  
[codesandbox.io](https://codesandbox.io)

The screenshot shows the CodeSandbox web application interface. On the left, there's a sidebar with project settings: Title (empty), Description (empty), Template ([create-react-app](#)), and stats (63,421 views, 53 likes, 0 comments). Below that is a 'Files' section with files: Project (Hello.js, index.html), index.js (selected), and Dependencies. The main area shows the code editor for /index.js:

```
1 import React from 'react';
2 import { render } from 'react-dom';
3 import Hello from './Hello';
4
5 const styles = {
6   fontFamily: 'sans-serif',
7   textAlign: 'center',
8 };
9
10 const App = () => (
11   <div style={styles}>
12     <Hello name="CodeSandbox" />
13     <h2>Start editing to see some magic happen {\u2728}</h2>
14   </div>
15 );
16
17 render(<App />, document.getElementById('root'));
18
```

The browser tab shows the URL <https://new.codesandbox.io>. The page content displays the rendered output: "Hello CodeSandbox!" and "Start editing to see some magic happen 🚀".

# 3 Corporate Investment

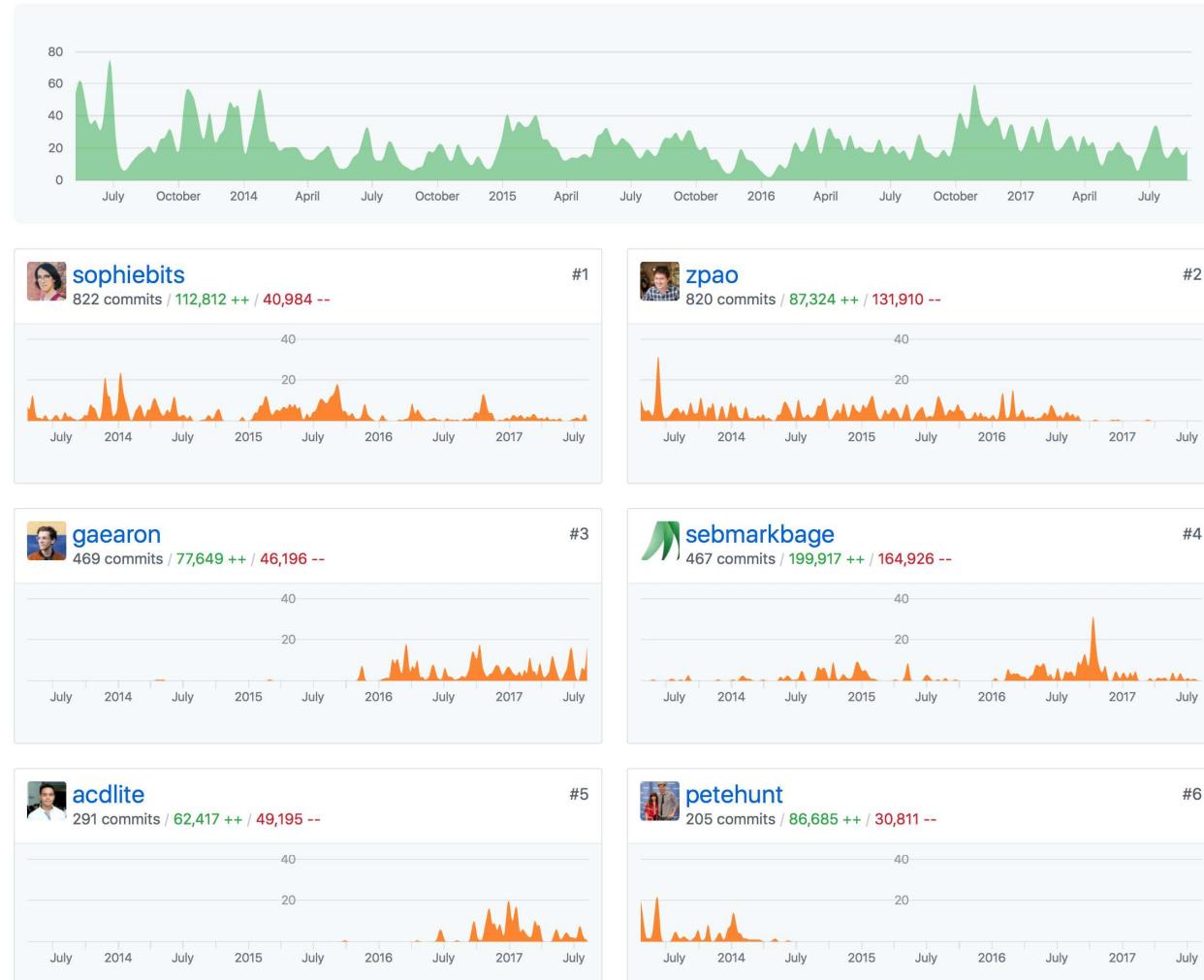




Created and maintained by Facebook



July 2013 – July 2017  
Contributions to master, excluding merge commits



## RECENT POSTS

[DOM Attributes in React 16](#)  
[Error Handling in React 16](#)  
[React v15.6.0](#)  
[What's New in Create React App](#)  
[React v15.5.0](#)  
[React v15.4.0](#)  
[Our First 50,000 Stars](#)  
[Relay: State of the State](#)  
[Create Apps with No Configuration](#)  
[Mixins Considered Harmful](#)  
[All posts ...](#)

# DOM Attributes in React 16

September 8, 2017 by [Dan Abramov](#)

In the past, React used to ignore unknown DOM attributes. If you wrote JSX with an attribute that React doesn't recognize, React would just skip it. For example, this:

Code

```
// Your code:  
<div mycustomattribute="something" />
```

would render an empty div to the DOM with React 15:

Code

```
// React 15 output:  
<div />
```

In React 16, we are making a change. Now, any unknown attributes will end up in the DOM:

Code

```
// React 16 output:  
<div mycustomattribute="something" />
```

## Why Are We Changing This?

React has always provided a JavaScript-centric API to the DOM. Since React components

[facebook.github.io/react/blog](http://facebook.github.io/react/blog)



This repository

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reactjs / react-codemod

Watch 39

Unstar 1,163

Fork 120

Code

Issues 14

Pull requests 8

Projects 0

Wiki

Insights ▾

## React codemod scripts

197 commits

1 branch

0 releases

33 contributors

BSD-3-Clause

Branch: master ▾

New pull request

Create new file

Upload files

Find file

Clone or download ▾



bvaughn committed on GitHub Merge pull request #154 from Realeative/patch-1 ...

Latest commit d8a1d47 on Jul 28

<a href="#">jest</a>	upgraded jest (#77)	a year ago
<a href="#">transforms</a>	Merge pull request #152 from AugustinLF/prop-types-retain-leading-com...	a month ago
<a href="#">.babelrc</a>	Make the tests run fast.	2 years ago
<a href="#">.eslintignore</a>	Add eslint.	2 years ago
<a href="#">.eslintrc.js</a>	Class transform with property initializer (#54)	a year ago
<a href="#">.gitattributes</a>	Import code from the React repo	2 years ago
<a href="#">.gitignore</a>	Add eslint.	2 years ago
<a href="#">.travis.yml</a>	Add travis.	2 years ago
<a href="#">LICENSE</a>	add license, patents	2 years ago
<a href="#">PATENTS</a>	add license, patents	2 years ago
<a href="#">README.md</a>	README formatting tweak	a month ago

```
import React from 'React';
// later...
React.PropTypes.string
```

```
import PropTypes from 'prop-types'
// later...
PropTypes.string
```

◀ Warning in React 15.5+

◀ Codemod update

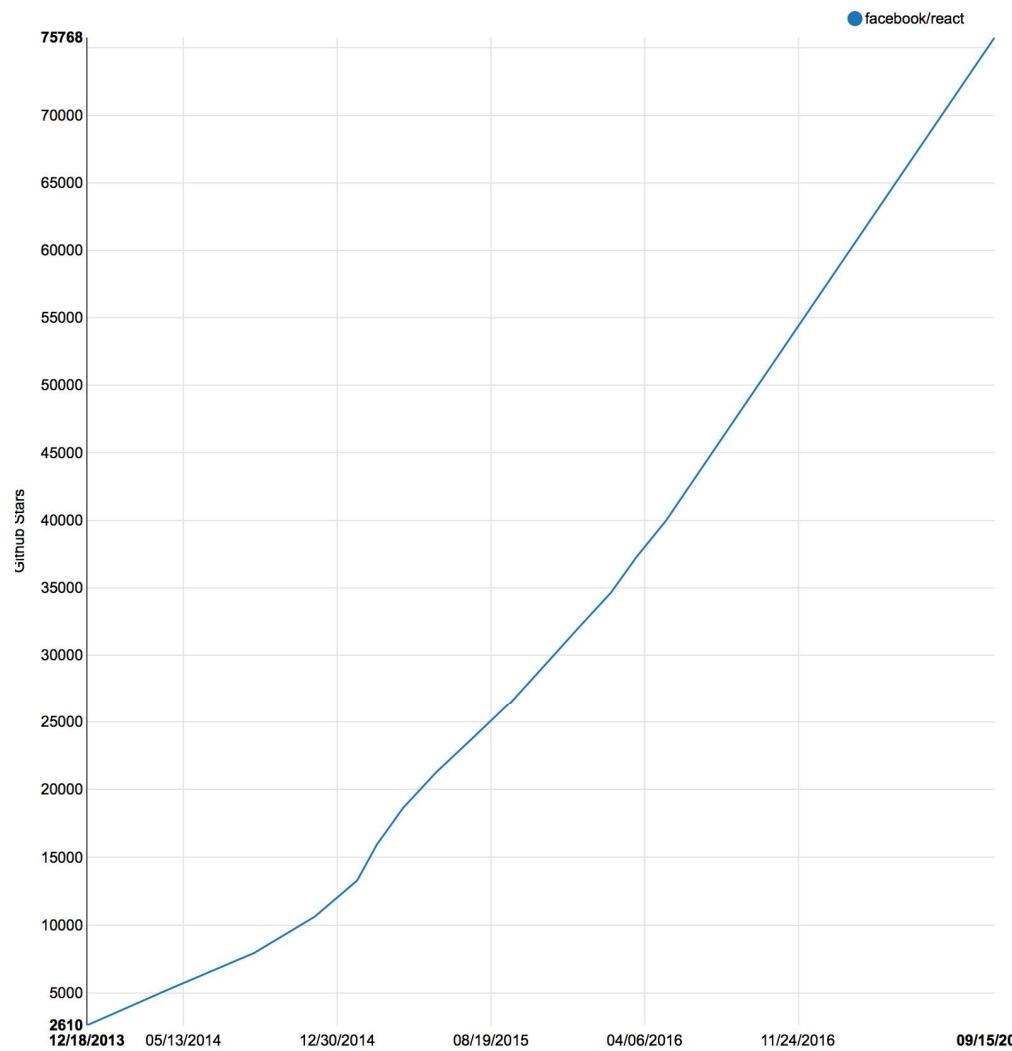


30,000



# 4 Community





[timqian.com/star-history/#facebook/react](http://timqian.com/star-history/#facebook/react)



This repository

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Pull requests Issues Marketplace Explore



facebook / react

Watch ▾ 4,959

Unstar 75,768

Fork 14,311

Code

Issues 589

Pull requests 153

Projects 0

Wiki

Insights ▾

A declarative, efficient, and flexible JavaScript library for building user interfaces. <https://facebook.github.io/react/>

9,020 commits

58 branches

70 releases

1,060 contributors

Branch: master ▾

New pull request

Create new file

Upload files

Find file

Clone or download ▾

 acdlite committed on GitHub	Push host root context when bailing out on low priority (#10712)	...	Latest commit b5ac963 2 days ago
 .github	Update issue template with PropTypes package (#10578)		17 days ago
 docs	Small typo fixed (#10701)		2 days ago
 eslint-rules	Make nodeType into constant for readability and reuse (#9113)		5 months ago
 fixtures	Warn against custom non-lowercase attributes (#10699)		3 days ago
 flow	Embed ReactNative event types in JavaScript (#10567)		16 days ago
 mocks	Streamline Fiber/Stack testing and bundling setup a little bit (#9964)		3 months ago
 packages	16.0.0-rc.3		2 days ago
 scripts	ReactNativeBridgeEventPlugin supports lazily-registered event types (#		2 days ago



stars:&gt;1

Pull requests Issues Marketplace Explore



Repositories 2M

Code

Commits

Issues

Wikis

Users

Advanced search

## 2,112,712 repository results

Sort: Most stars ▾

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The <https://freeCodeCamp.org> open source codebase and curriculum. Learn to code and help nonprofits.

[certification](#) [curriculum](#) [nonprofits](#) [react](#)

JavaScript

★ 291k

Updated 4 hours ago

[twbs/bootstrap](#)

The most popular HTML, CSS, and JavaScript framework for developing responsive, mobile first projects on the web.

[bootstrap](#) [javascript](#) [css](#) [html](#)

JavaScript

★ 115k

Updated 10 minutes ago

[EbookFoundation/free-programming-books](#)

★ 93.5k

Freely available programming books

[education](#) [list](#) [books](#) [resource](#)

Updated 5 days ago

[facebook/react](#)

JavaScript

★ 75.8k

A declarative, efficient, and flexible JavaScript library for building user interfaces.

Updated 11 hours ago

[tensorflow/tensorflow](#)

★ 70k

Computation using data flow graphs for scalable machine learning

[tensorflow](#) [python](#) [machine-learning](#)

## Languages

JavaScript	416,255
Python	226,116
Java	200,619
PHP	138,705
Ruby	125,928
C++	92,841
C	90,468
C#	67,300
Objective-C	65,923
Shell	64,456



find packages



sign up or log in

Orgs are free. Discover, share, and reuse code in your team. [Create a free org »](#)

## ★ react public

An npm package to get you immediate access to [React](#), without also requiring the JSX transformer. This is especially useful for cases where you want to [browserify](#) your module using React.

**Note:** by default, React will be in development mode. The development version includes extra warnings about common mistakes, whereas the production version includes extra performance optimizations and strips all error messages.



npm install react

[how?](#) [learn more](#)

[acdlite](#) published a month ago

**16.0.0** is the latest of 131 releases

[github.com/facebook/react](#)

[facebook.github.io/react](#)

MIT

Collaborators list



Stats

280,760 downloads in the last day

1,700,040 downloads in the last week

6,891,708 downloads in the last month

308 open issues on GitHub

115 open pull requests on GitHub



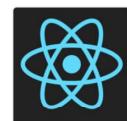
News Trending Stacks Tools Jobs Stories Comparisons

Search



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Application and Data / Libraries / Javascript UI Libraries



## React

A JavaScript library for building user interfaces



535

I Use This



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Votes  
3.14K

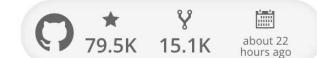
Fans  
3.32K

Stacks  
**4.95K**

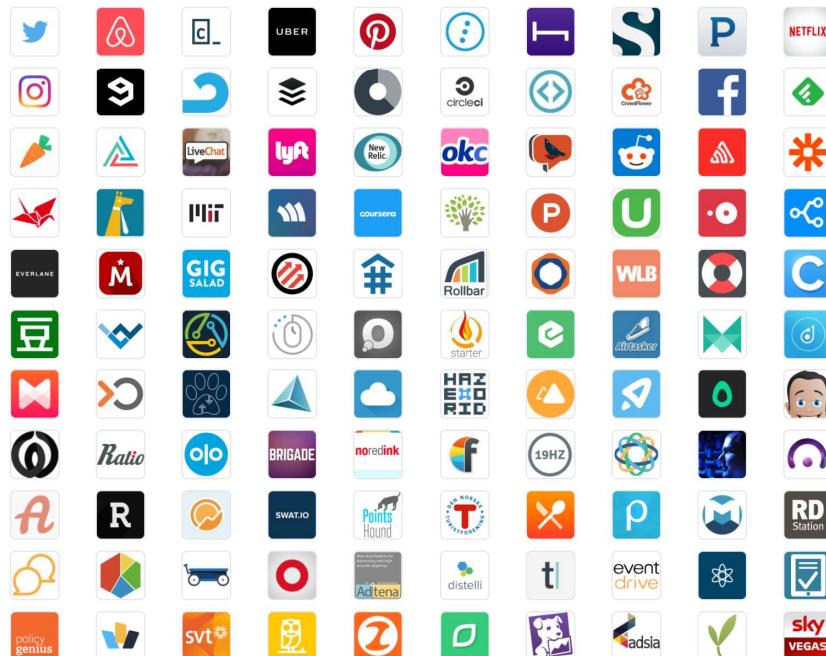
Integrations  
77

Jobs  
3.05K

News New  
2.99K



### COMPANIES USING REACT



### SPONSORED TOOL



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### GROUP

Javascript UI Libraries

### LAYER

Application and Data  
Utilities  
DevOps  
Business Tools





# Application and Data

[Application and Data](#)

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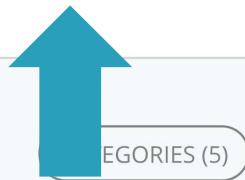
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## TOP 10 TOOLS & SERVICES

- |   |   |   |   |   |   |   |  |   |  |
|---|---|---|---|---|---|---|--|---|--|
| 1st  | 2nd  | 3rd  | 4th  | 5th  | 6th  | 7th  | 8th  | 9th  | 10th  |
|---|---|---|---|---|---|---|--|---|--|



CATEGORIES (5)

[Libraries](#) [Languages & Frameworks](#) [Assets and Media](#) [Data Stores](#) [Application Hosting](#)

## JavaScript



## Bootstrap



## nginx



### STACK LAYER

- Application and Data**
- Utilities
- DevOps
- Business Tools

 See Rankings

70,000 stars on GitHub  
1,100+ contributors  
Millions of downloads/month





Tips    Q&A Schedule    Transcripts    Learning

# WELCOME TO Reactiflux

We're a chat community of 20,000+ React JS , React Native , Redux , Jest , Relay and GraphQL developers. We hold Q&A's with Facebook Engineers and other developers in the community . Come chat about tech related to React & JavaScript or ask for help!

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[Reactiflux.com](https://Reactiflux.com)

## Tags

[popular](#)[name](#)[new](#)

A tag is a keyword or label that categorizes your question with other, similar questions. Using the right tags makes it easier for others to find and answer your question.

Type to find tags: [reactjs](#) × 55649

a JavaScript library for building user interfaces. It uses a declarative paradigm and aims to be both efficient and flexible.

104 asked today, 832 this week

[react-native](#) × 19232

React Native lets you build mobile apps using only JavaScript. It uses the same design as React, letting you compose a rich mobile UI

43 asked today, 350 this week

[react-router](#) × 5544

React Router - A complete routing library for React inspired by Ember's routing system

6 asked today, 56 this week

[react-redux](#) × 4296

Official React bindings for Redux

13 asked today, 99 this week

[azure-active-directory](#) × 2664

Microsoft Azure Active Directory (Microsoft Azure AD) is a modern, REST-based service that provides identity management and access

46 asked this week, 184 this month

[system.reactive](#) × 2608

System.Reactive refers to the Reactive Extensions for .NET, also known as Rx. Rx provides developers with a reactive

7 asked this week, 29 this month

[reactive-programming](#) × 2501

a programming paradigm oriented around data flows and the propagation of change.

10 asked this week, 48 this month

[react-jsx](#) × 1835

a JavaScript XML syntax transform recommended for use with React.

635 asked this year

[react-native-android](#) × 1380

React-native-android: refers everything related to react-native Android development. Component, Styling, Routing and Native API

5 asked today, 31 this week

[reactive-cocoa](#) × 798

a Swift framework inspired by Functional Reactive Programming. It provides APIs for composing and transforming streams of

10 asked this month, 109 this year

[reactjs-flux](#) × 791

the application architecture that Facebook uses for building client-side web applications with React. It complements React's

94 asked this year

[react-bootstrap](#) × 740

Twitter Bootstrap 3 components built with ReactJS, for ReactJS applications

8 asked this week, 30 this month

[react-navigation](#) × 650

An easy-to-use navigation solution to be used across React and React Native projects <https://github.com/react-community/react-navigation>

5 asked today, 24 this week

[react-native-ios](#) × 601

React-native-ios: refers everything related to react-native ios development. Component, Styling, Routing and Native API access in

18 asked this week, 68 this month

[reactiveui](#) × 565

Questions related to ReactiveUI, an MVVM framework that integrates with the Reactive Extensions

5 asked this week, 14 this month

[create-react-app](#) × 499

a starter-kit for creating React apps with no build configuration. If you're getting started with React, use this to automate the build of your

11 asked this week, 74 this month

[react-router-v4](#) × 495[reactivemongo](#) × 391[react-router-redux](#) × 370[reactives](#) × 314



I just copy/pasted  
my entire React  
app from  
StackOverflow!

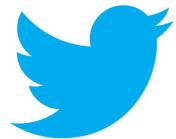
An answer to your use  
case likely exists online.



## Companies Using React



Microsoft



NETFLIX



reddit

The New York Times



PayPal



Fabric

Get started

Styles

Components

Resources

Blog

# Office UI Fabric

The official front-end framework for building experiences  
that fit seamlessly into Office and Office 365.

[Get started](#)

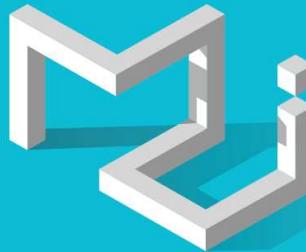
Fabric Core >=5.1.0-0 <6.0.0-0 and Fabric React >=2.23.0 <3.0.0



Built with React

Fabric's robust, up-to-date

[dev.office.com/fabric](https://dev.office.com/fabric)

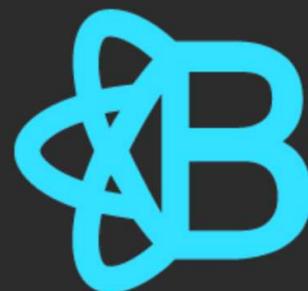


# Material-UI

A Set of React Components that Implement  
Google's Material Design

DEMO

[material-ui.com](http://material-ui.com)



The most popular front-end framework, rebuilt for React.

- 🔊 We are actively working to reach a 1.0.0 release, and we would love your help to get there.
- ☑ Check out the [1.0.0 roadmap](#) and [contributing guidelines](#) to see where you can help out.
- 👉 A great place to start is any [issue](#) with a [help-wanted](#) label.
- ✓ We are open to pull requests that address bugs, improve documentation, enhance accessibility, add test coverage, or bring us closer to feature parity with [Bootstrap](#).
- 👤 We actively seek to invite frequent pull request authors to join the organization. ↗

⚠ The project is under active development, and APIs will change.

[react-bootstrap.github.io](https://react-bootstrap.github.io)

## Components

- [React Component List](#)
- [JS.coach - A catalog of React components](#)
- [iReact: Fantastic React Components and Libraries!](#)
- [Khan Academy React Components](#)
- [VistarMedia Components](#)
- [React Topcoat UI components](#)
- [react-material - Material design components written with React.js and React Style](#)
- [material-ui - A CSS Framework and a Set of React Components for Material Design](#)
- [react-google-login-component](#)
- [react-facebook-login-component](#)
- [react-component - A Collection of React UI Components](#)
- [Ant Design - An enterprise-class UI design language and React-based implementation](#)
- [UXCore - A React UI Component Set living for enterprise backend application](#)
- [react-desktop - OS X and Windows UI components built with React](#)
- [react-aim - Determine the cursor aim for triggering mouse events](#)
- [react-touch - React photo viewer for mobile](#)
- [griddle - A simple grid component for use with React](#)
- [react-grid - Data grid for React](#)
- [React-iCheck - iCheck components built with React. Highly customizable checkboxes and radio buttons](#)
- [react-absolute-grid - An absolutely positioned, animated, filterable, sortable, drag and droppable, ES6 grid for React](#)
- [react-async - Async rendering for React components](#)
- [react-async-input - Inputs that behave properly with async set{State,Props} calls](#)
- [react-countup - A React component wrapper around CountUp.js](#)
- [react-mediaswitch - Choose your DOM based on media queries](#)
- [react-frame-component - Render your React app to an iFrame](#)
- [react-gravatar - React component for rendering a gravatar profile image](#)
- [markdown-react - React Render for Standard Markdown](#)
- [react-component-gallery — React component for creating an evenly spaced components](#)
- [react-markdown-textarea - Component to create textareas for entering Markdown](#)
- [react-markdown-area - Github flavored markdown editor with live preview](#)
- [react-textarea-autosize - Textarea component for React which grows with content](#)
- [react-spinner - Zero configuration loading spinner](#)
- [react-treeview - Easy, light, flexible tree view made with React](#)

[github.com/enaqx/awesome-react](https://github.com/enaqx/awesome-react)

# Ecosystem



React Router



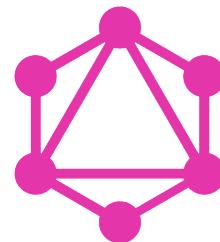
Redux



Mobx



Jest



GraphQL

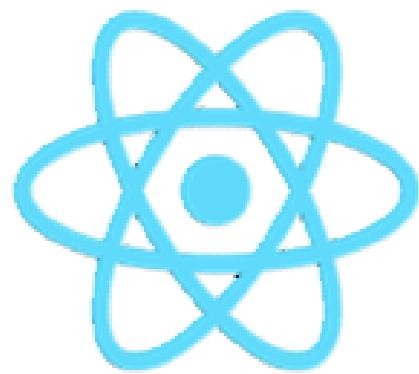


Next.js



# 5 Performance





## Why Virtual DOM?

**Updating the DOM is expensive**  
**So React minimizes DOM changes**



Without Virtual DOM

**Blindly update DOM using new state.**

With Virtual DOM

**Update the DOM in the most efficient way.**



- Avoids layout thrash
- Saves battery and CPU
- Enables simple programming model

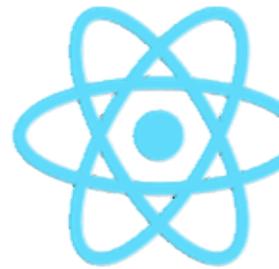


## Duration in milliseconds ± standard deviation (Slowdown = Duration / Fastest)

Name	angular-v1. 6.3-keyed	angular-v2. 4.9-keyed	angular-v4. 1.2-keyed	ember-v2. 13.0	glimmer-v 0.3.10	knockout- v3.4.1	preact-v7. 1.0	react-v15. 5.4-keyed	vanillajs-k eyed	vue-v2.3.3- keyed
<b>create rows</b> Duration for creating 1000 rows after the page loaded.	251.8 ± 8.0 (1.8)	197.3 ± 9.3 (1.4)	193.1 ± 7.9 (1.4)	344.6 ± 13.8 (2.5)	326.3 ± 14.7 (2.4)	358.2 ± 9.0 (2.6)	182.2 ± 8.3 (1.3)	188.9 ± 10.9 (1.4)	138.5 ± 5.8 (1.0)	166.7 ± 8.6 (1.2)
<b>replace all rows</b> Duration for updating all 1000 rows of the table (with 5 warmup iterations).	278.3 ± 16.7 (1.9)	201.3 ± 5.9 (1.4)	197.4 ± 5.3 (1.3)	292.7 ± 12.1 (2.0)	263.0 ± 8.1 (1.8)	369.7 ± 19.6 (2.5)	200.9 ± 6.8 (1.4)	201.0 ± 6.4 (1.4)	148.0 ± 4.5 (1.0)	168.5 ± 5.0 (1.1)
<b>partial update</b> Time to update the text of every 10th row (with 5 warmup iterations).	12.5 ± 2.0 (1.0)	12.8 ± 3.3 (1.0)	13.0 ± 4.5 (1.0)	17.1 ± 1.7 (1.1)	23.3 ± 7.8 (1.5)	14.0 ± 4.5 (1.0)	15.3 ± 2.1 (1.0)	16.5 ± 2.3 (1.0)	14.1 ± 4.7 (1.0)	17.3 ± 2.9 (1.1)
<b>select row</b> Duration to highlight a row in response to a click on the row. (with 5 warmup iterations).	8.1 ± 3.6 (1.0)	4.9 ± 3.4 (1.0)	3.4 ± 2.3 (1.0)	8.6 ± 2.4 (1.0)	13.6 ± 5.6 (1.0)	11.4 ± 2.6 (1.0)	8.7 ± 3.9 (1.0)	8.8 ± 3.4 (1.0)	10.1 ± 4.7 (1.0)	9.3 ± 1.7 (1.0)
<b>swap rows</b> Time to swap 2 rows on a 1K table. (with 5 warmup iterations).	14.7 ± 1.5 (1.0)	13.5 ± 1.1 (1.0)	13.4 ± 1.0 (1.0)	16.4 ± 1.5 (1.0)	19.0 ± 1.7 (1.2)	14.7 ± 1.2 (1.0)	13.6 ± 1.0 (1.0)	14.7 ± 0.9 (1.0)	11.4 ± 1.1 (1.0)	18.3 ± 1.5 (1.1)
<b>remove row</b> Duration to remove a row. (with 5 warmup iterations).	47.4 ± 2.4 (1.1)	46.4 ± 2.0 (1.1)	46.1 ± 3.2 (1.1)	49.1 ± 3.2 (1.1)	60.9 ± 7.2 (1.4)	48.3 ± 2.3 (1.1)	45.5 ± 2.1 (1.1)	47.2 ± 3.2 (1.1)	42.8 ± 1.9 (1.0)	52.6 ± 2.7 (1.2)
<b>create many rows</b> Duration to create 10,000 rows	3108.7 ± 2162.2 (2.3)	1866.7 ± 55.4 (1.4)	1946.0 ± 41.8 (1.5)	2569.3 ± 56.3 (1.9)	2543.4 ± 42.8 (1.9)	3485.6 ± 114.0 (2.6)	1862.0 ± 25.0 (1.4)	1852.4 ± 29.0 (1.4)	1331.1 ± 22.2 (1.0)	1587.5 ± 33.9 (1.2)
<b>append rows to large table</b> Duration for adding 1000 rows on a table of 10,000 rows.	454.8 ± 42.1 (1.5)	365.1 ± 52.3 (1.2)	324.6 ± 10.1 (1.1)	524.2 ± 23.6 (1.8)	489.6 ± 34.1 (1.7)	5127.3 ± 132.0 (17.4)	349.0 ± 12.7 (1.2)	345.6 ± 10.4 (1.2)	295.3 ± 12.8 (1.0)	399.5 ± 11.0 (1.4)
<b>clear rows</b> Duration to clear the table filled with 10,000 rows.	817.6 ± 37.2 (4.7)	389.9 ± 39.0 (2.2)	379.9 ± 11.3 (2.2)	303.9 ± 74.7 (1.7)	209.0 ± 6.6 (1.2)	579.6 ± 47.5 (3.3)	332.1 ± 7.5 (1.9)	398.4 ± 8.2 (2.3)	174.8 ± 4.2 (1.0)	254.5 ± 5.0 (1.5)
<b>startup time</b> Time for loading, parsing and starting up	118.1 ± 5.1 (2.9)	104.9 ± 8.6 (2.6)	84.3 ± 2.6 (2.1)	245.2 ± 5.6 (6.0)	80.4 ± 3.5 (2.0)	60.3 ± 2.5 (1.5)	44.2 ± 2.2 (1.1)	70.0 ± 2.9 (1.7)	40.5 ± 9.5 (1.0)	56.6 ± 2.5 (1.4)
<b>slowdown geometric mean</b>	1.69	1.36	1.31	1.72	1.55	2.10	1.21	1.30	1.00	1.21

Source: [stefankrause.net/js-frameworks-benchmark6/webdriver-ts-results/table.html](http://stefankrause.net/js-frameworks-benchmark6/webdriver-ts-results/table.html)





~35k





# Inferno v3.9.0

An extremely fast React-like JavaScript library  
for building modern user interfaces.

[Get Started](#)[GitHub](#)

## Tiny Size

Inferno is much smaller in size, 9kb vs 45kb gzip. This means inferno is faster to transfer over the network and much faster to parse.



## React Compatible

React-like API, concepts and component lifecycle events. Switch over easily with `inferno-compat`.



## Insane Performance

One of the fastest front-end frameworks for rendering UI in the DOM, making 60 FPS on mobile possible.



PREACT

Guide ▾

About ▾

REPL



# PREACT

Fast 3kB alternative to React with the same ES6 API.

GET STARTED

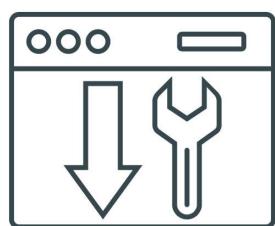
SWITCH TO PREACT



Star

14,123

# A different kind of library.



## Closer to the Metal

Preact provides the thinnest possible Virtual DOM abstraction on top of the DOM. The web is a stable platform, it's time we stopped reimplementing it in the name of safety.

Preact is also a first-class citizen of the web platform. It diffs Virtual DOM against the DOM itself, registers real event handlers, and plays nicely with other libraries.

# 6 Testability



## Traditional UI tests

Hassle to set up

Requires browser

Slow

Brittle integration tests

Time-consuming to write, maintain

## React

Little to no config required

Run in-memory via Node

Fast

Reliable, deterministic unit tests

Write quickly, update easily



```
function HelloWorld(props) {  
  return (  
    <div>  
      | Hello {props.message}  
    </div>  
  )  
}
```

**Reliable**  
**Deterministic**  
**No side-effects**



# Testing Frameworks



Mocha



Jasmine



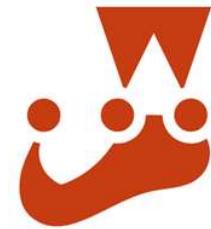
Tape



QUnit



AVA



Jest





# Jest



Delightful JavaScript Testing

[TRY OUT JEST](#)[GET STARTED](#)[WATCH TALKS](#)[LEARN MORE](#) [Star](#)

12,872



## Easy Setup

Complete and easy to set-up JavaScript testing solution. Works out of the box for any React project.



## Instant Feedback

Fast interactive watch mode runs only test files related to changed files and is optimized to give signal quickly.



## Snapshot Testing

Capture snapshots of React trees or other serializable values to simplify testing and to analyze how state changes over time.

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### Guides

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WebPack

JSDOM

Jest

Karma

Mocha

React Native

Lab

Tape and AVA

Installation

Working with React 16.x

Working with React 15.x

Working with React 0.14.x

Working with React 0.13.x

API Reference

Shallow Rendering

# Enzyme

[gitter](#) [join chat](#)

[npm v3.1.0](#) [license MIT](#) [build passing](#) [coverage 96%](#) [discord testing@reactiflux](#)

Enzyme is a JavaScript Testing utility for React that makes it easier to assert, manipulate, and traverse your React Components' output.

Enzyme's API is meant to be intuitive and flexible by mimicking jQuery's API for DOM manipulation and traversal.

## Upgrading from Enzyme 2.x or React < 16

Are you here to check whether or not Enzyme is compatible with React 16? Are you currently using Enzyme 2.x? Great! Check out our [migration guide](#) for help moving on to Enzyme v3 where React 16 is supported.

## Installation

To get started with enzyme, you can simply install it via npm. You will need to install enzyme along with an Adapter corresponding to the version of react (or other UI Component library) you are using. For instance, if you are using enzyme with React 16, you can run:

```
npm i --save-dev enzyme enzyme-adapter-react-16
```

Each adapter may have additional peer dependencies which you will need to install as well. For instance, `enzyme-adapter-react-16` has peer dependencies on `react`, `react-dom`, and `react-test-renderer`.

At the moment, Enzyme has adapters that provide compatibility with `React 16.x`, `React 15.x`, `React 0.14.x` and `React 0.13.x`.



What do you want to learn?

Cory

housecor@gmail.com



...

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by Cory House

Learn how to use Redux, React Router, and ES6 to build a real world app with React. Use Webpack, Babel, ESLint, npm scripts, Mocha, Enzyme, and more to build a rich, one step, custom React development environment and build process from the ground up.

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1m 36s



Course author



Cory House

Cory is an independent consultant with over 15 years of experience in software development. He is the principal consultant at [reactjsconsulting.com](http://reactjsconsulting.com) and a Microsoft MVP.

Course info

Level Intermediate

Rating  (876)

My rating 

Duration 6h 13m

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...

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by Cory House

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Core Decisions



37m 16s



Course author



Cory House

Cory is an independent consultant with over 15 years of experience in software development. He is the principal consultant at [reactjsconsulting.com](http://reactjsconsulting.com) and a Microsoft MVP.

Course info

Level Intermediate

Rating (46)

My rating

Duration 6h 21m

Released 5 Jun 2017

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# Summary



## Why React?

- Flexibility
- Developer experience
- Corporate investment
- Community support
- Performance
- Testability

Next up: Tradeoffs

