



# SERVICE WORKERS



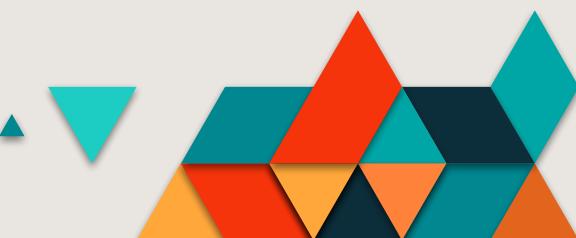
TRAVIS RICKS



# ABOUT ME

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- Tokyo by way of Michigan, USA
  - Previously worked as a designer, product manager and director of operations
  - (Looking for front-end work in Tokyo!)
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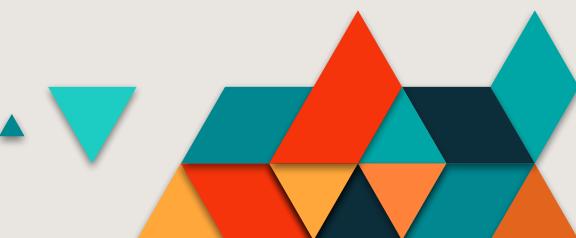
# WHAT IS A SERVICE WORKER?

but first...





# WHAT IS A PROGRESSIVE WEB APPLICATION?



# Progressive Web Apps

- Feel like native apps
- Add features like offline functionality and push notifications
- Developers only need one codebase



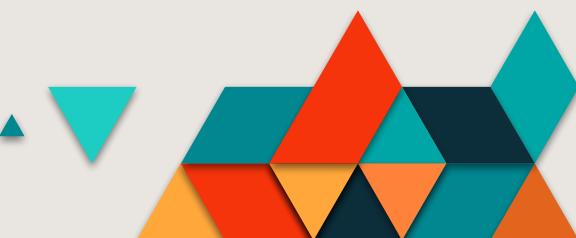
# Progressive Web Apps

- Popular examples are Twitter, AirBnb, The Guardian
- PWAs use various technologies



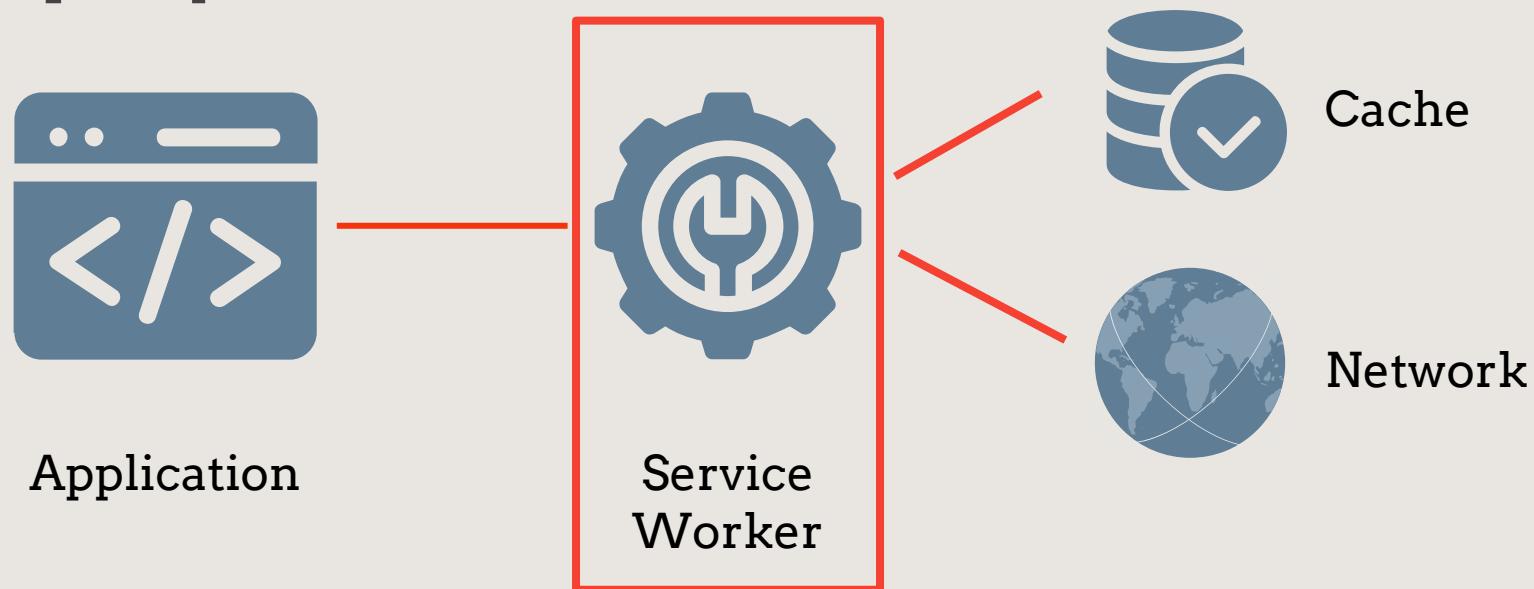


# WHAT IS A SERVICE WORKER?



# Service Workers

- Service Workers (SWs) essentially act as proxy servers

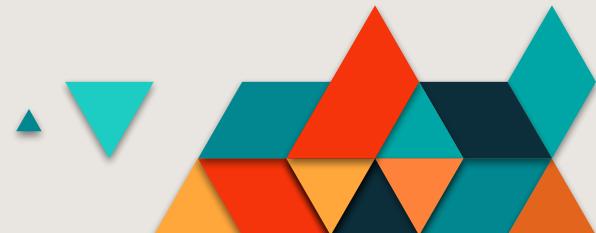


# Service Workers

- Service Workers (SWs) essentially act as proxy servers
- Web worker

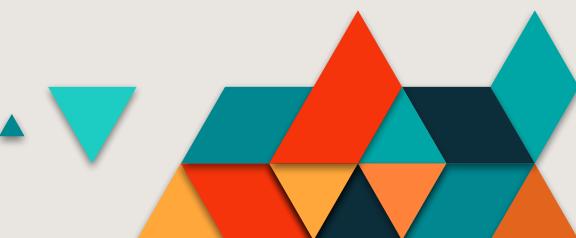
# Service Workers

- Cache assets
- Enable offline functionality
- Send push notifications



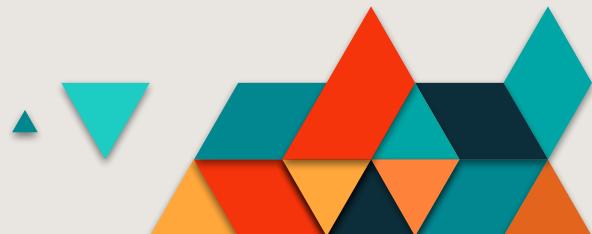


# HOW DO SWs WORK?



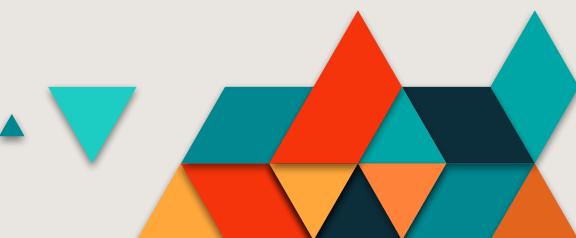
# How do SWs work?

1. SW is registered
2. SW begins listening for events
3. It can now intercept network requests
4. If the SW source is updated, the browser updates its copy





# SERVICE WORKER BROWSER ADOPTION



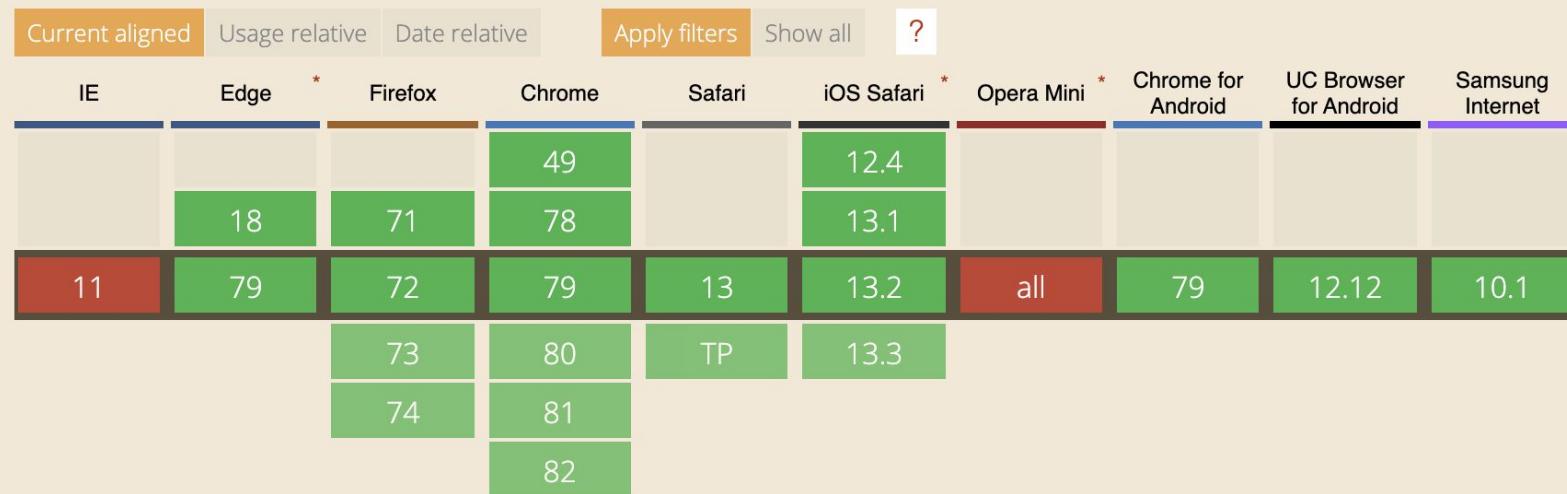
# Can I Use?

## Service Workers

📄 - WD

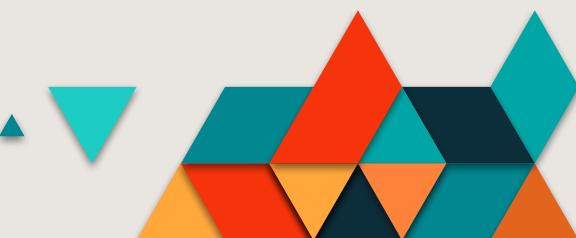
Method that enables applications to take advantage of persistent background processing, including hooks to enable bootstrapping of web applications while offline.

Usage  
Global  
% of all users  
92.77% + 0.3% = 93.07%



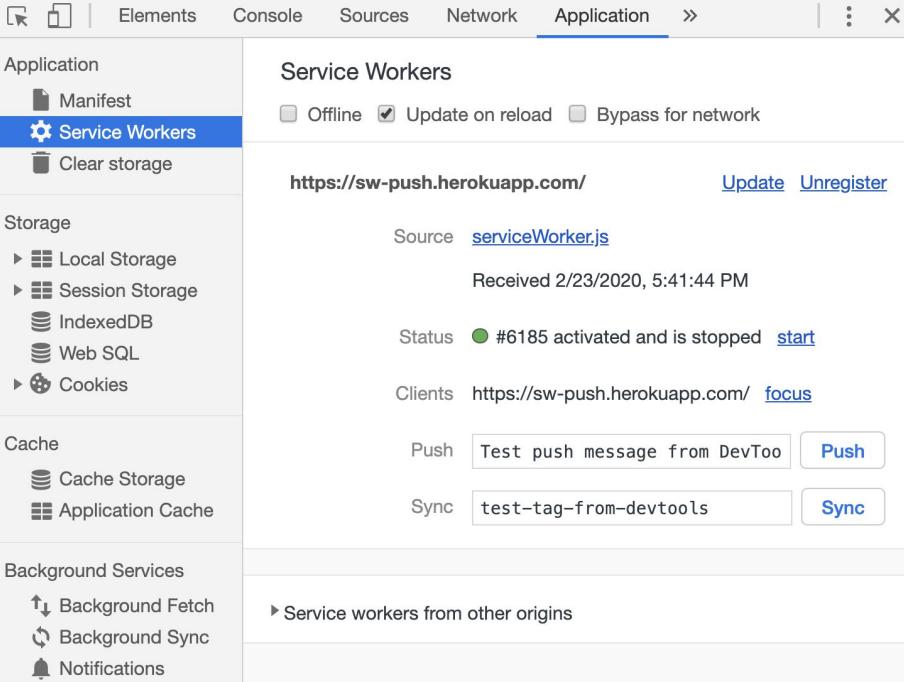


# TOOLS FOR DEVELOPING SERVICE WORKERS



# Tools

- Chrome DevTools, Application tab



The screenshot shows the Chrome DevTools Application tab interface. On the left is a sidebar with the following sections and items:

- Application**
  - Manifest
  - Service Workers** (selected)
  - Clear storage
- Storage**
  - Local Storage
  - Session Storage
  - IndexedDB
  - Web SQL
  - Cookies
- Cache**
  - Cache Storage
  - Application Cache
- Background Services**
  - Background Fetch
  - Background Sync
  - Notifications

The main content area is titled "Service Workers" and displays information for the service worker at <https://sw-push.herokuapp.com/>. The details are as follows:

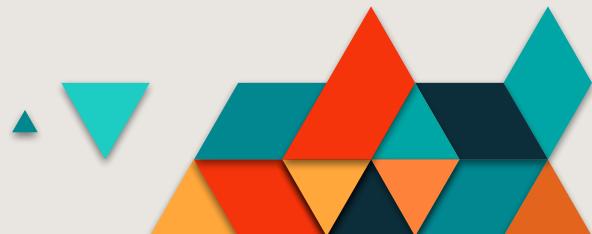
- Source:** [serviceWorker.js](#)
- Received:** 2/23/2020, 5:41:44 PM
- Status:** #6185 activated and is stopped ([start](#))
- Clients:** <https://sw-push.herokuapp.com/> ([focus](#))
- Push:**  [Push](#)
- Sync:**  [Sync](#)

At the bottom, there is a note: "► Service workers from other origins".



# Tools

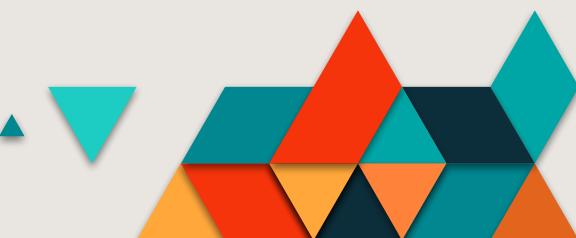
- Chrome DevTools, Application tab
- Google Workbox
- Node package - Generate Service Worker
- Create React App





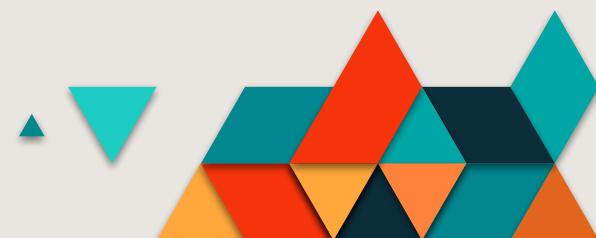
# DEMO

# PUSH NOTIFICATION





# SERVICE WORKER CHALLENGES



# Challenges

- Must use HTTPS
- Issues with Private/Incognito browsing





# BUILD YOUR FIRST SERVICE WORKER



# Build your first Service Worker

1. Register your service worker, verify the browser supports SWs



# Build your first Service Worker

```
1 if ('serviceWorker' in navigator) {  
2   navigator.serviceWorker.register('./serviceWorker.js')  
3     .then((reg) => {  
4       // registration worked  
5       console.log('Registration succeeded.');  
6     }).catch((error) => {  
7       // registration failed  
8       console.log('Registration failed with ' + error);  
9     });  
10 }
```



# Build your first Service Worker

1. Register your service worker, verify the browser supports SWs
2. Install and activate



# Build your first Service Worker

```
1 self.addEventListener('install', (event) => {
2   event.waitUntil(
3     caches.open('v1').then((cache) => {
4       return cache.addAll([
5         './sw-test/',
6         './sw-test/index.html',
7         './sw-test/style.css',
8         './sw-test/app.js',
9         './sw-test/image-list.js',
10        './sw-test/star-wars-logo.jpg',
11        './sw-test/gallery/',
12        './sw-test/gallery/bountyHunters.jpg',
13        './sw-test/gallery/myLittleVader.jpg',
14        './sw-test/gallery/snowTroopers.jpg'
15      ]);
16    })
17  );
18});
```





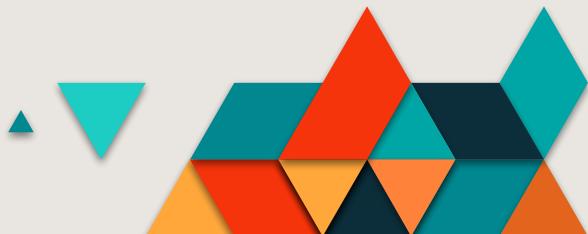
DEMO

# OFFLINE FALBACK



# Key Takeaways

- Service Workers add native-like features to your website/webapp.
- You must serve your site/app via HTTPS
- Safe to use - supported by over 90% of modern browsers





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# Thank you!



Repo on Github

[bit.ly/travis-sw-talk](https://bit.ly/travis-sw-talk)

