



BREAKING LIMITS ON JAVASCRIPT FOR MOBILE

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This is the right venue! We are going to start ~10

WIFI: NewCircleStudent
Pass: opensource99 (you will need to enter it twice)

mobile+web developer & trainer





LinkedIn



CISCOTM

The Cisco logo consists of a series of seven vertical bars of increasing height followed by the word "CISCO" in red, with a small "TM" symbol to its top right.

Google



MOTOROLA

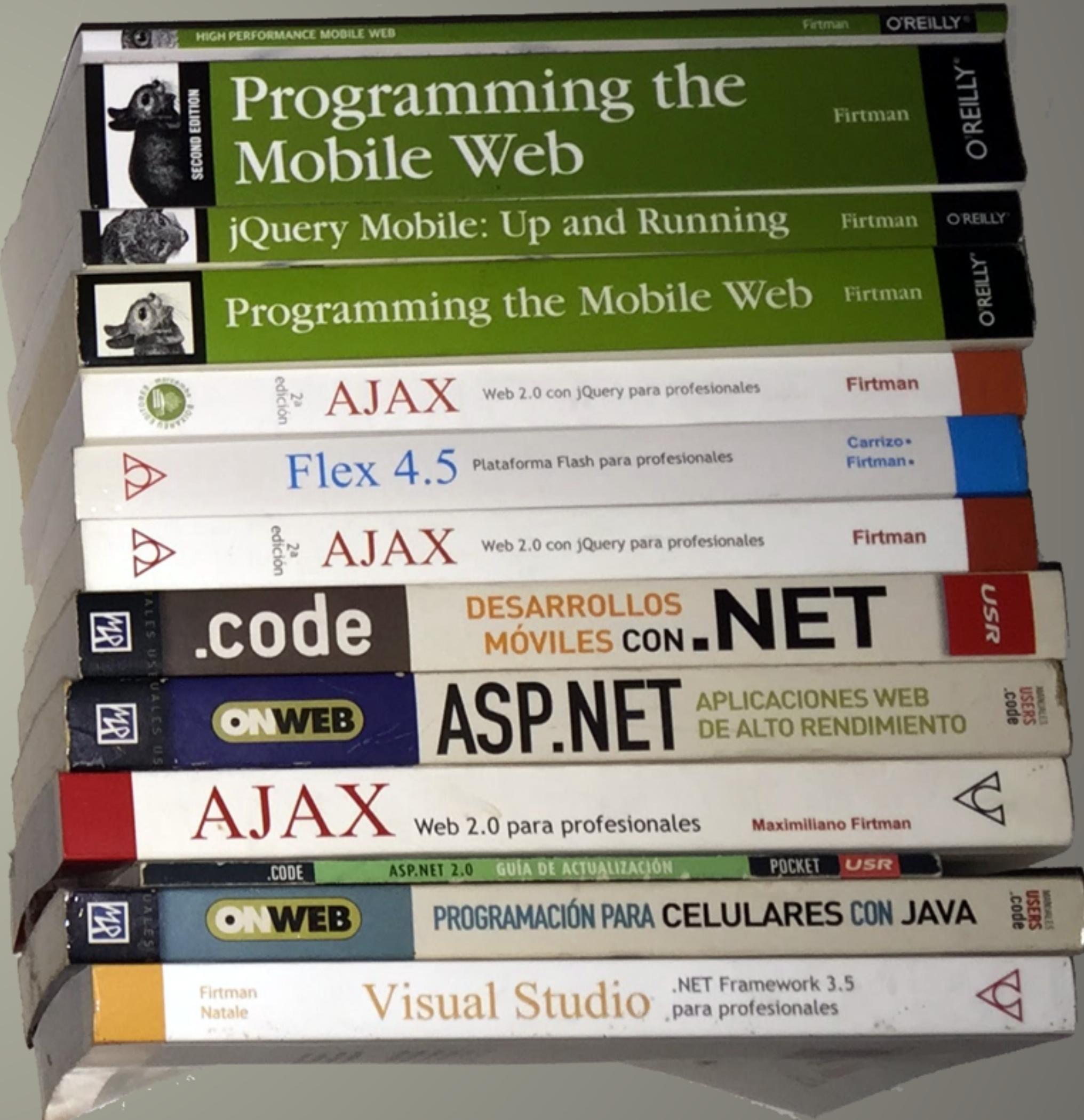
The Motorola logo features a blue circle with three white, stylized, downward-pointing triangles inside. Below the circle, the word "MOTOROLA" is written in a bold, black, sans-serif font.

YAHOO!



BlackBerry

The BlackBerry logo consists of a black rectangle with the word "BlackBerry" in white. To the left of the text is the company's signature "B" logo, which is a stylized, horizontal, multi-dot pattern.



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High Performance Mobile Web

BEST PRACTICES FOR OPTIMIZING
MOBILE WEB APPS

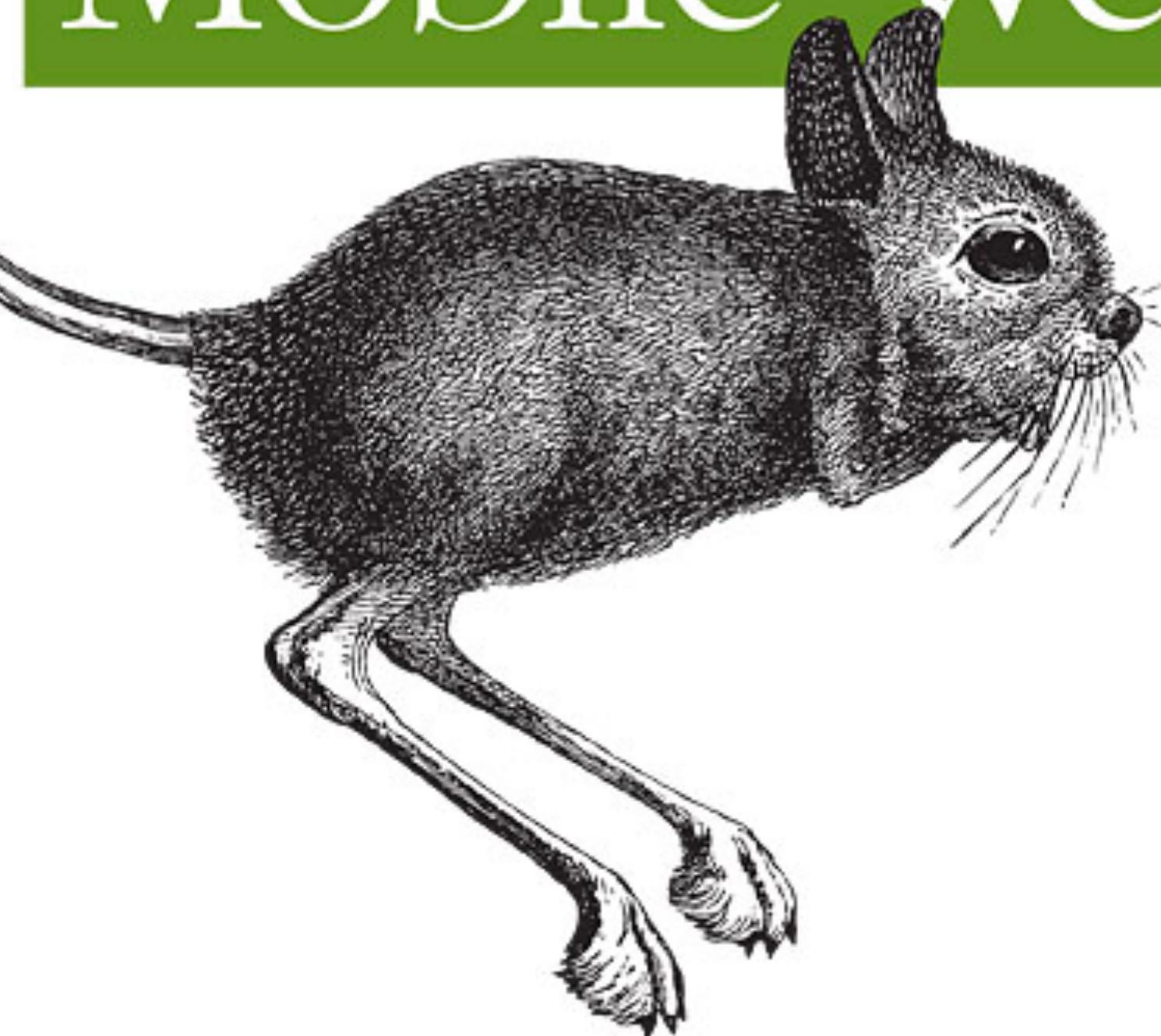


Maximiliano Firtman

Reaching Users on iPhone, Android,
BlackBerry, Windows Phone, and more

2nd Edition
Includes HTML5

Programming the Mobile Web



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Mobile HTML5

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VIDEO

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Apache Cordova and PhoneGap

Best Practices for
Web Designers and
Web Developers

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VIDEO

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Offline Web

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Mastering Web Views

MOBILE HTML

Trying to understand HTML5 compatibility on mobile and tablet browsers



Do not program conditionals per platform or version. Always use feature detection.

This list is in progress. New tests, new features, more specificity of each feature and more mobile browsers soon!

If you want to help on the test, [contact me](#).

by [fir](#) | [Updates on Twitter](#) | [Blog](#)

Feature	Safari on iOS	Android Browser		BlackBerry Browser		Internet Explorer	Opera		Firefox	webOS Browser	Symbian Browser
Version tested	iPhone, iPad	Phones (1.0-2.3)	Tablets (3.0+)	Phones	Tablet	Windows Phone	Mobile	Mini	Android		Nokia phones
Minimum version tested	3.2	1.5	3.0	5.0	1.0	9	11	5	6	1.4	^3
Application Cache W3C API Offline package installation.	✓	✓ 2.1+	✓	✓ 6.0+	✓		✓		✓	✓	
Web storage W3C API Persistent and session storage.	✓	✓ 2.0+	✓	✓ 6.0+	✓	✓	✓		✓	✓	
Web SQL storage W3C API (no active) Persistent SQLite storage.	✓	✓ 2.0+	✓	✓ 6.0+	✓		✓			✓	
Geolocation W3C API Geolocation & tracking using GPS, cells or Wi-Fi.	✓	✓ 2.0+	✓	✓ 6.0+	✓	✓	✓		✓	✓	
Multimedia W3C API Video & Audio Players	✓	✓ 2.3+	✓	✓ 7.0+	✓	✓	✓		✓	✓	
Server-Sent Events W3C API EventSource pattern to maintain the connection to the server open	✓ 4.1+						✓		✓		
Web Sockets W3C API New bidirectional protocol over HTTP	✓ 4.2+			✓ 6.1+	✓		✓		✓		

questions

yes, please

anytime

Agenda

10.00~11.30: A-Web Apps

11.30~12.30: Lunch Break

12.30~ 2.00: C-APIs

2.00~ 2.30: Afternoon Break

2.30~ 4.00: D-Native and Web

4.00~ ∞ : Q&A

logistics

Let's Start!



Vision

Pre-requisites

Outline

- 1- Offline Detection
- 2- Data Storage
- 3- Application Cache
- 4- Service Workers
- 5- Background Sync
- 6- Web Push

Why Offline on the Web?

Offline Web Advantages

- 1- Improve experience
- 2- Offer offline access
- 3- Improve performance
- 4- App-like experience

Offline Web Use Cases

- 1- Bad connection
- 2- No connection
- 3- Webapp installation
- 4- Faster experience
- 5- Server problems

New Concepts

Offline First

- 1- Use local data when possible
- 2- Application Shell vs Content

Progressive Web Apps

- 1- Responsive layout
- 2- Works offline
- 3- Can be installed on the home screen of a device

Data Storage

Data Storage

1- Web Storage

Session / Local

2- WebSQL

3- IndexedDB

Application Cache

Advanced Techniques

Advanced Techniques

1- Fallback

2- Deleting the package

3- Adding more HTMLs

Application Cache Challenges

Challenges

1- Limits

2- Installation UI

3- Partial Updates

Service Workers

Promises

```
doSomething()  
  .then(function() {  
  
}).catch(function() {  
  
});
```

Cache Storage API

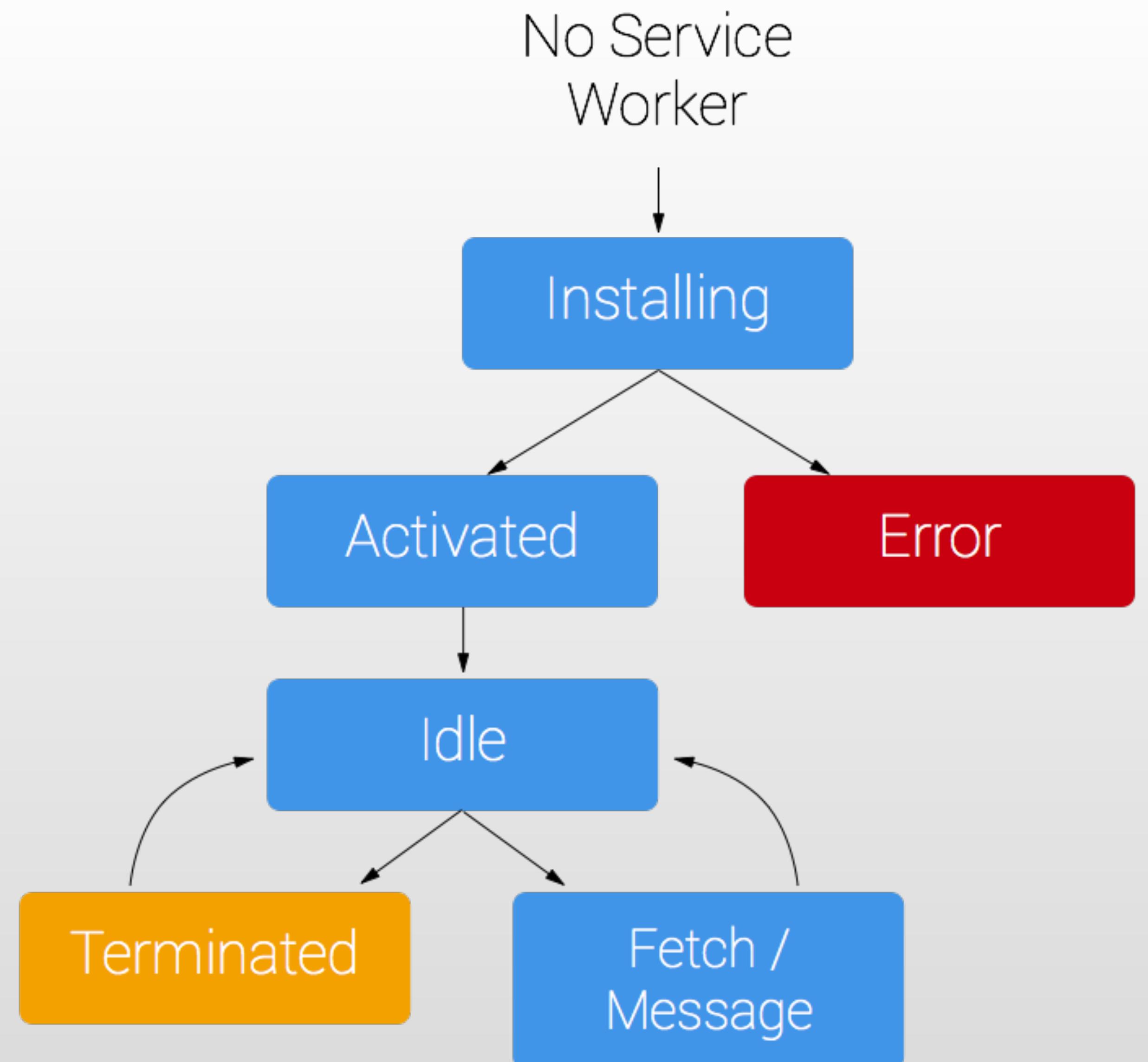
```
caches.open("myAppCache").then(function(cache) {  
    return cache.addAll(urls);  
})
```

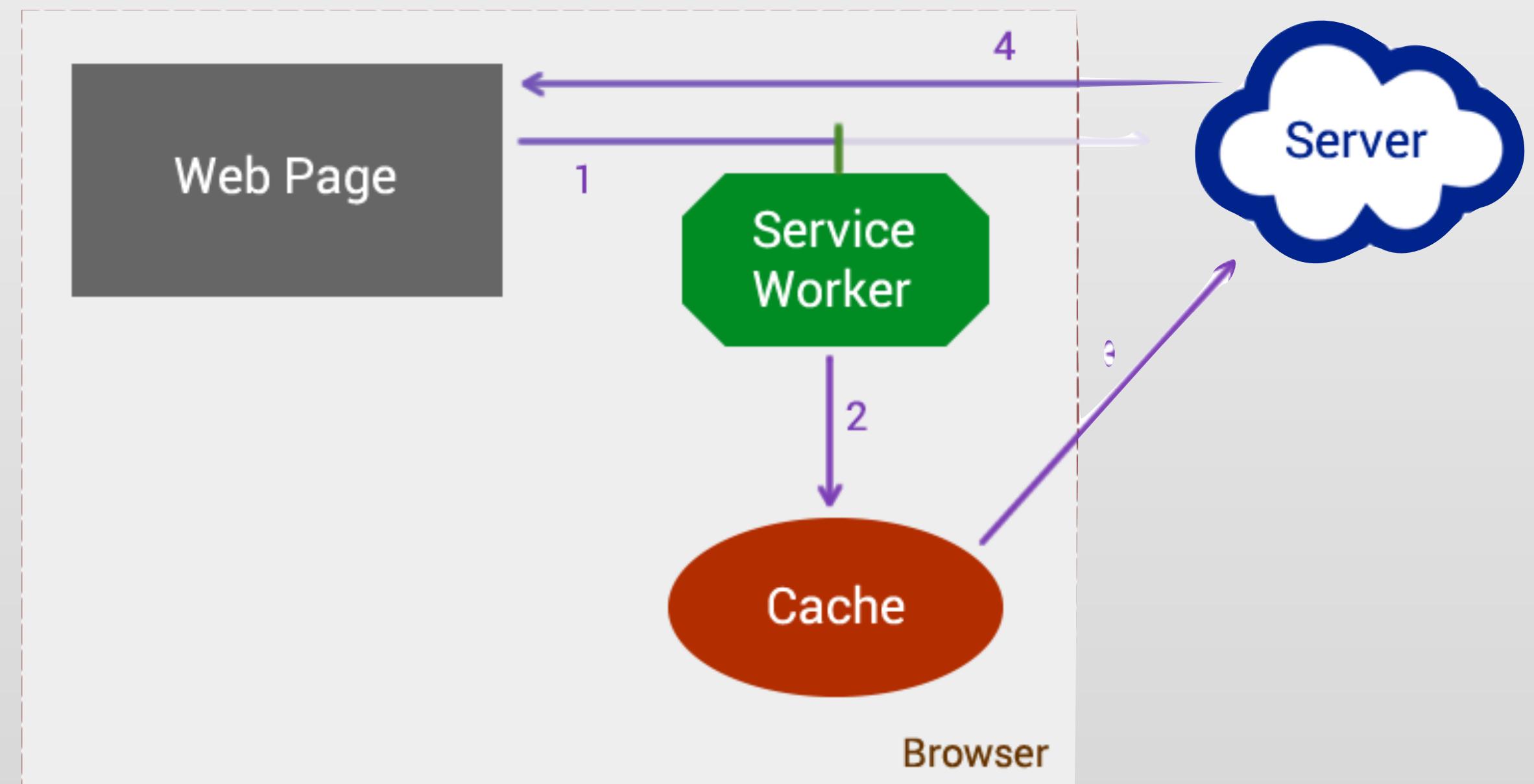
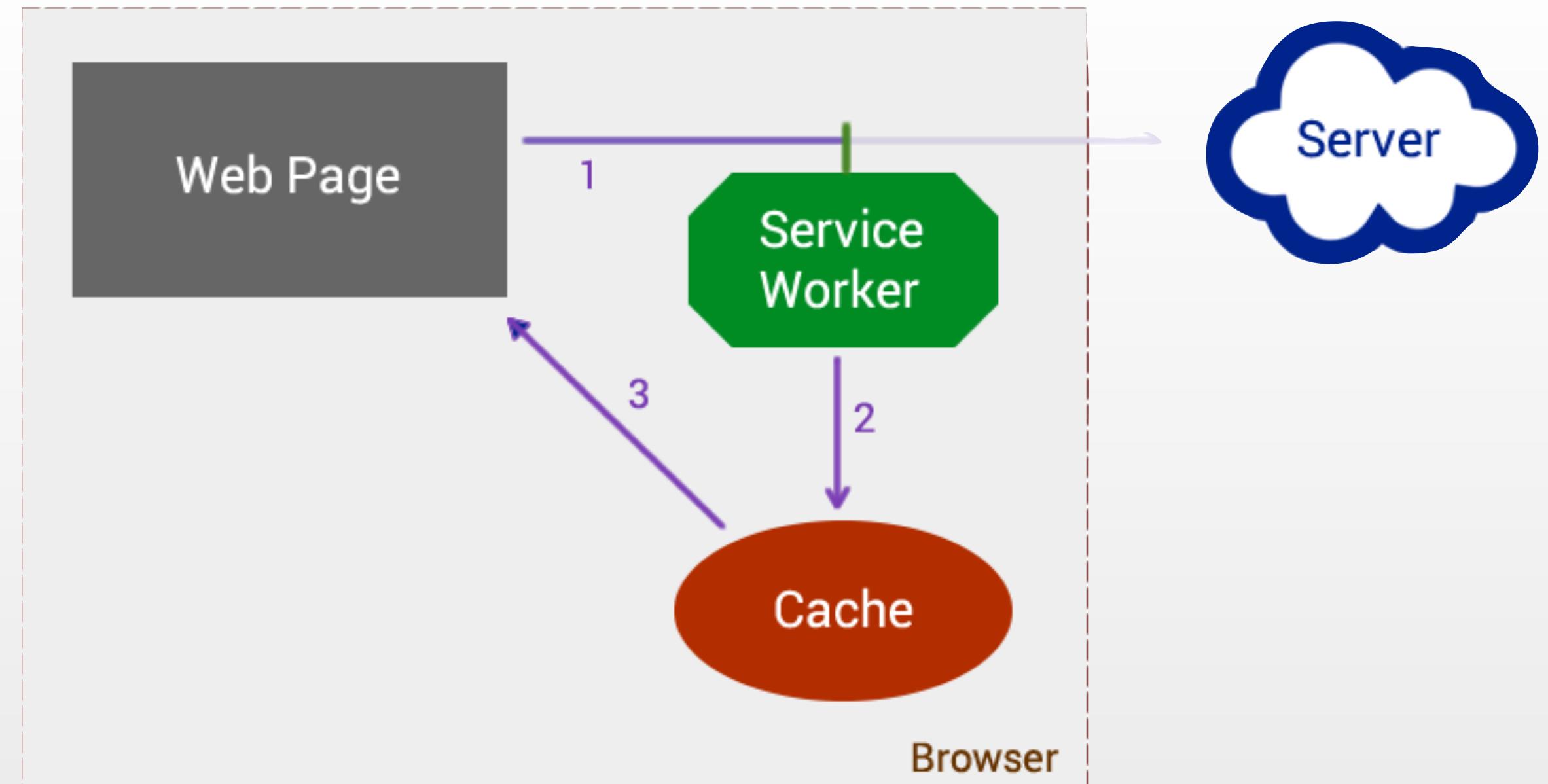
Service Workers

1- Compatibility

2- Requirements

3- Abilities





Service Workers

Demo

<http://ifixit-pwa.appspot.com/>

Service Workers - Coming

1- sync - Chrome 49+

2- periodic sync - future

3- geofencing - future

Service Workers - Sync

```
navigator.serviceWorker.ready.then(function(registration) {  
  registration.sync.register('envio').then(function() {  
    // registration succeeded  
  }, function() {  
    // registration failed  
  });  
});
```

Service Workers - Sync

```
self.addEventListener('sync', function(event) {  
  if (event.tag == 'envio') {  
    event.waitUntil(sendEverythingInTheOutbox());  
  }  
});
```

Service Workers - Periodic Sync

```
navigator.serviceWorker.ready.then(function(registration) {  
  registration.periodicSync.register({  
    tag: 'get-latest-news',           // default: ''  
    minPeriod: 12 * 60 * 60 * 1000, // default: 0  
    powerState: 'avoid-draining',   // default: 'auto'  
    networkState: 'avoid-cellular'  // default: 'online'  
  }).then(function(periodicSyncReg) {  
    // success  
  }, function() {  
    // failure  
  })  
});  
https://github.com/WICG/BackgroundSync/blob/master/explainer.md
```

Web Push Notifications

Push Subscription

1- Push API

2- Safari Proprietary API

Extra- iOS Hack: Passbooks

Extra- Windows: Live Tiles

Push Delivery

1- GCM

2- Web Push

2- Safari Proprietary API

Push Today

1- Safari (only on Mac)

2- Chrome

3- Firefox

Hack for iOS

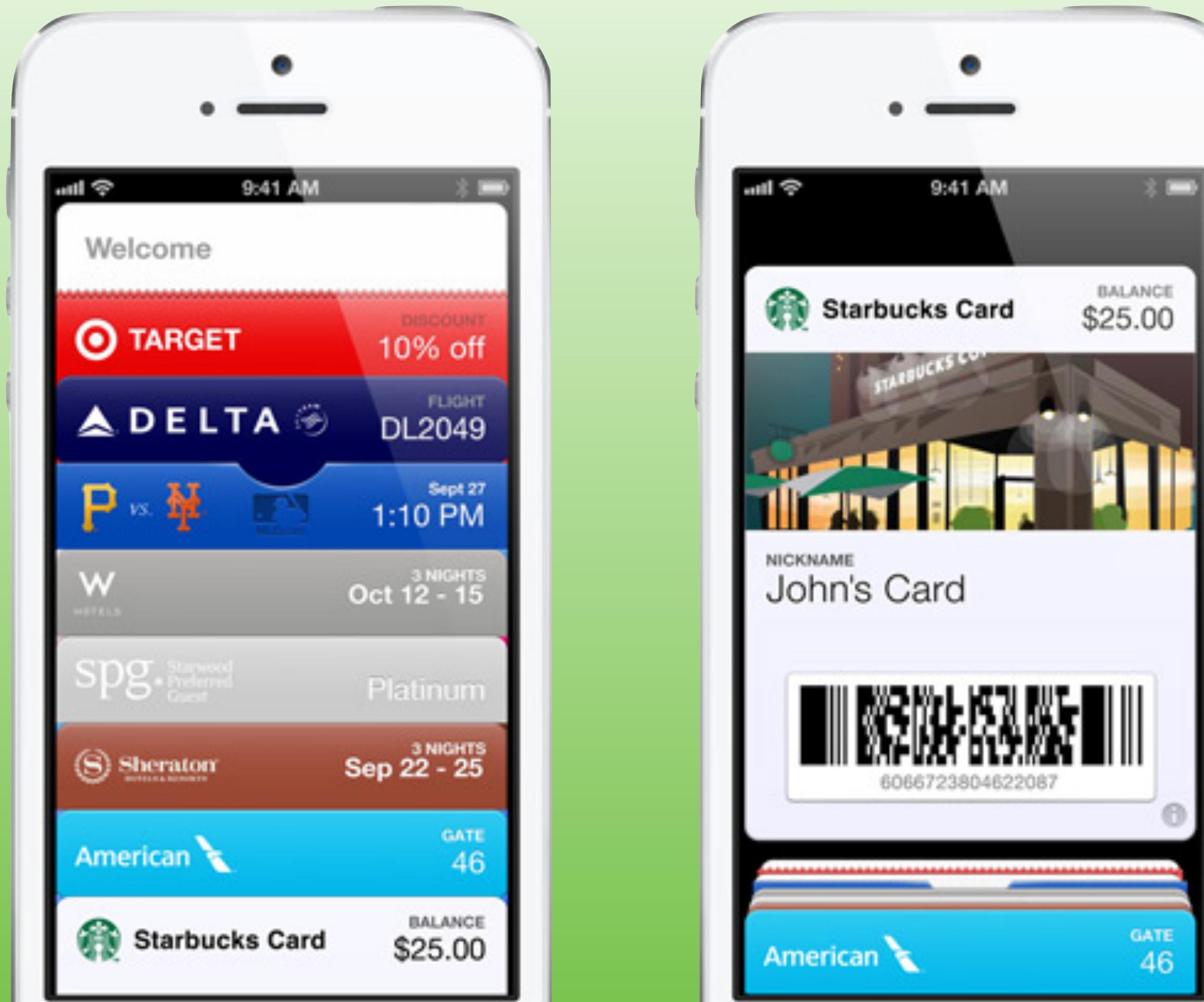
push

Subscribe to this site

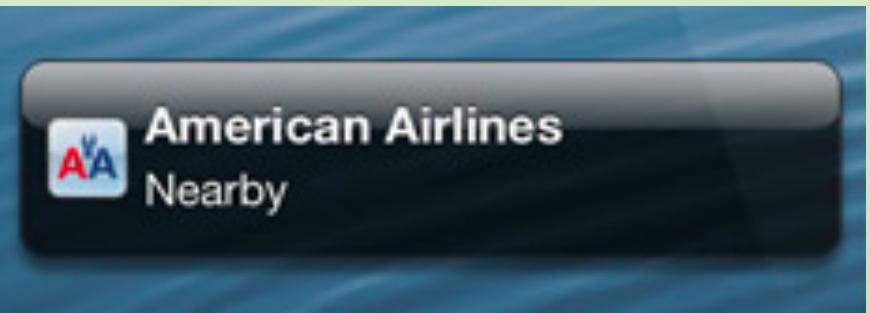
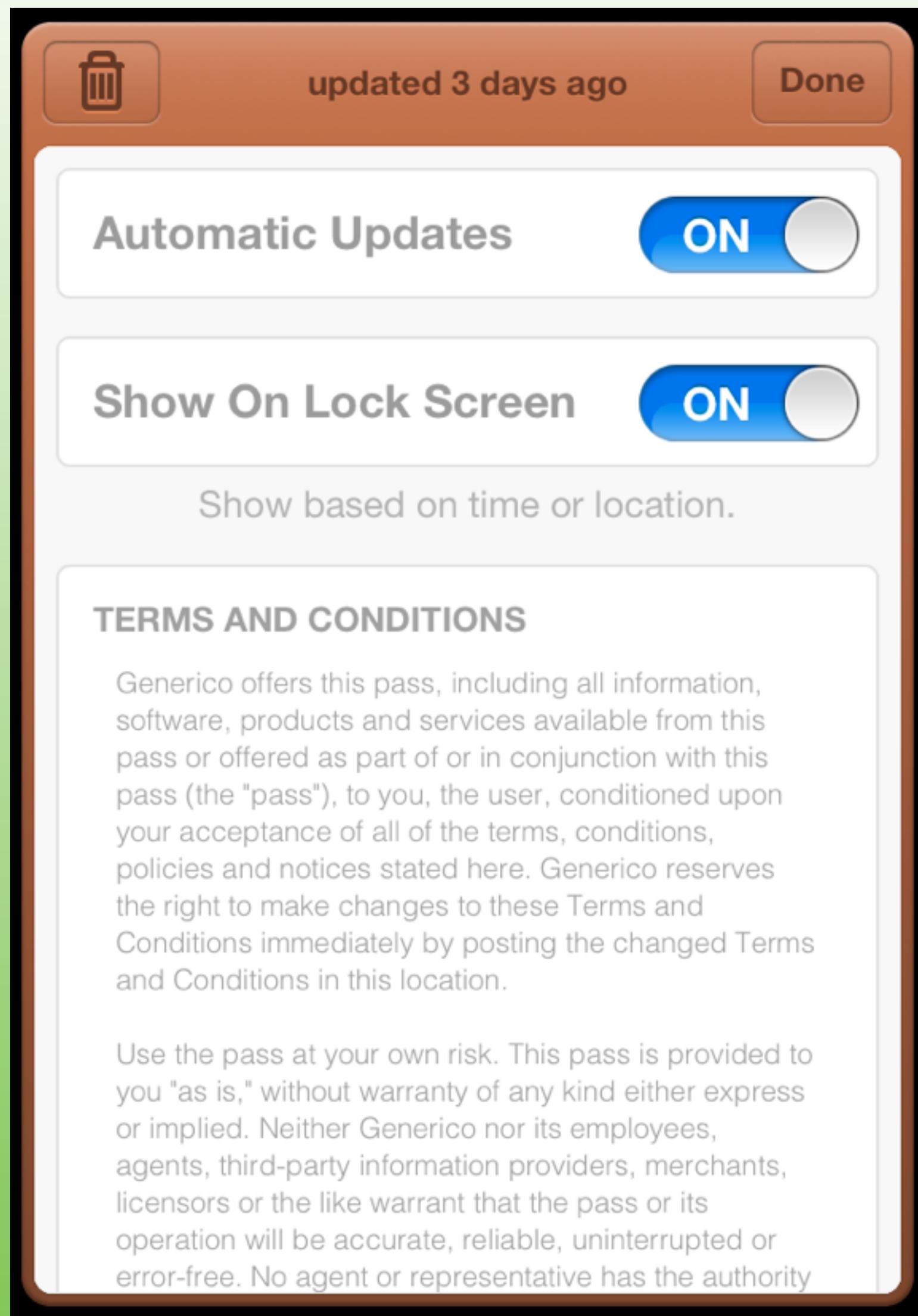
iOS



push



push



Hack for Windows

live tile

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TV: CNN | CNN en Español
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Amanpour. WEEKNIGHTS 15:00 ET / 17:00 ET

Editor's choice

Stars & their fast cars

New front in war on cancer

Endeavour heads to L.A.

Tiny homes hit the big city

The Berzins built a tiny home in Virginia's Blue Ridge Mountains to free themselves of the financial burden of owning a larger home. Next stop for diminutive dwellings? New York City. [FULL STORY](#)

TOP U.S. STORIES

- Secret revealed: Ohio woman unknowingly married father
- Unlikely teachers find purpose in the classroom
- Amateur rancher brings Southwest wastelands back to life
- The college students you don't know
- Q&A: Remembering 'the empress of fashion'
- Balancing fear, hope after a school shooting
- Google map pic shows teen with gun WWJ
- Feds accuse North Carolina sheriff of racial profiling

CNN The power of CNN on your Windows Phone

Download for Windows Phone

This Just In

Justice didn't OK flag salute ban

Attorneys release Open letter

U.S. News - Headlines, Stories and more

U.S. News - Headlines, Stories and more

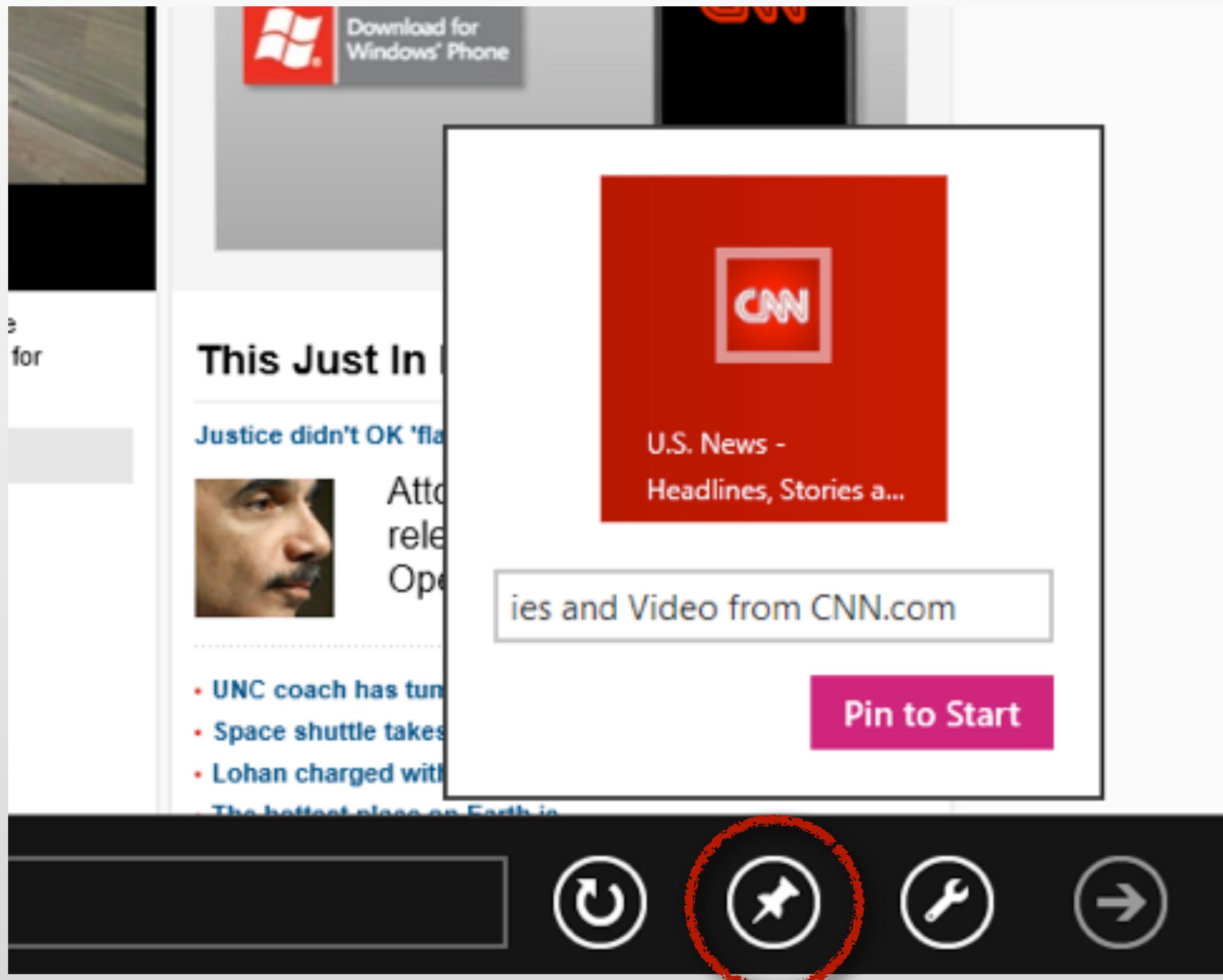
ies and Video from CNN.com

Pin to Start

← CNN →

<http://edition.cnn.com/US/>

live tile



live tile

```
<meta name="msapplication-TileImage"  
      content="tile.png">
```

```
<meta name="msapplication-TileColor"  
      content="#ef0303">
```

enhance your app

You've said *live tile!!!*

live tile

```
<meta name="msapplication-badge"  
      content="frequency=60;polling-uri=XXX">
```

live tile

```
<meta name="msapplication-badge"  
content="frequency=60;polling-uri=XXX">
```

```
<?xml version="1.0" ?>  
<badge value="3" />
```



live tile

```
<meta name="msapplication-badge"  
content="frequency=60;polling-uri=XXX">
```

```
<?xml version="1.0" ?>  
<badge value="newMessage" />
```



enhance your app

It's even better from

IE11



live tile

```
<meta name="msapplication-notification"  
      content="frequency=30;polling-uri=">
```



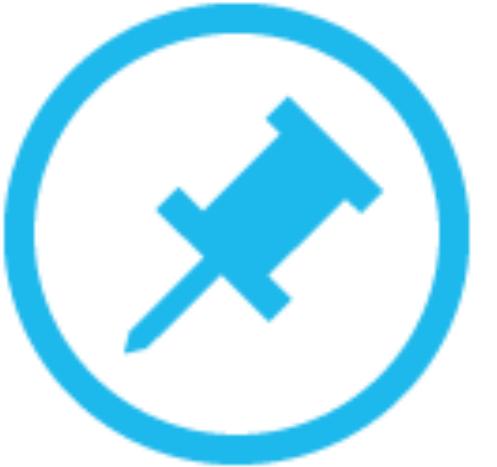
live tile

```
document.addEventListener('mssitepinned',  
    startPeriodicUpdateBatch, false);
```



live tile

```
document.addEventListener('mssitepinned',  
    startPeriodicUpdateBatch, false);
```



Got a minute? Build a site tile.

Your site sits next to apps on the Windows 8.1 Start Screen. Now with notifications. [Start now →](#)

① Build your own site tile ?

② Add Notifications ?

With Windows 8.1, pinned site tiles can notify a user outside Internet Explorer 11 and pull them right back in! If you have a web feed, you can automatically build notifications into your tile. Who said RSS was dead? If you don't have one, skip this step. You can choose to implement custom tile notifications later.

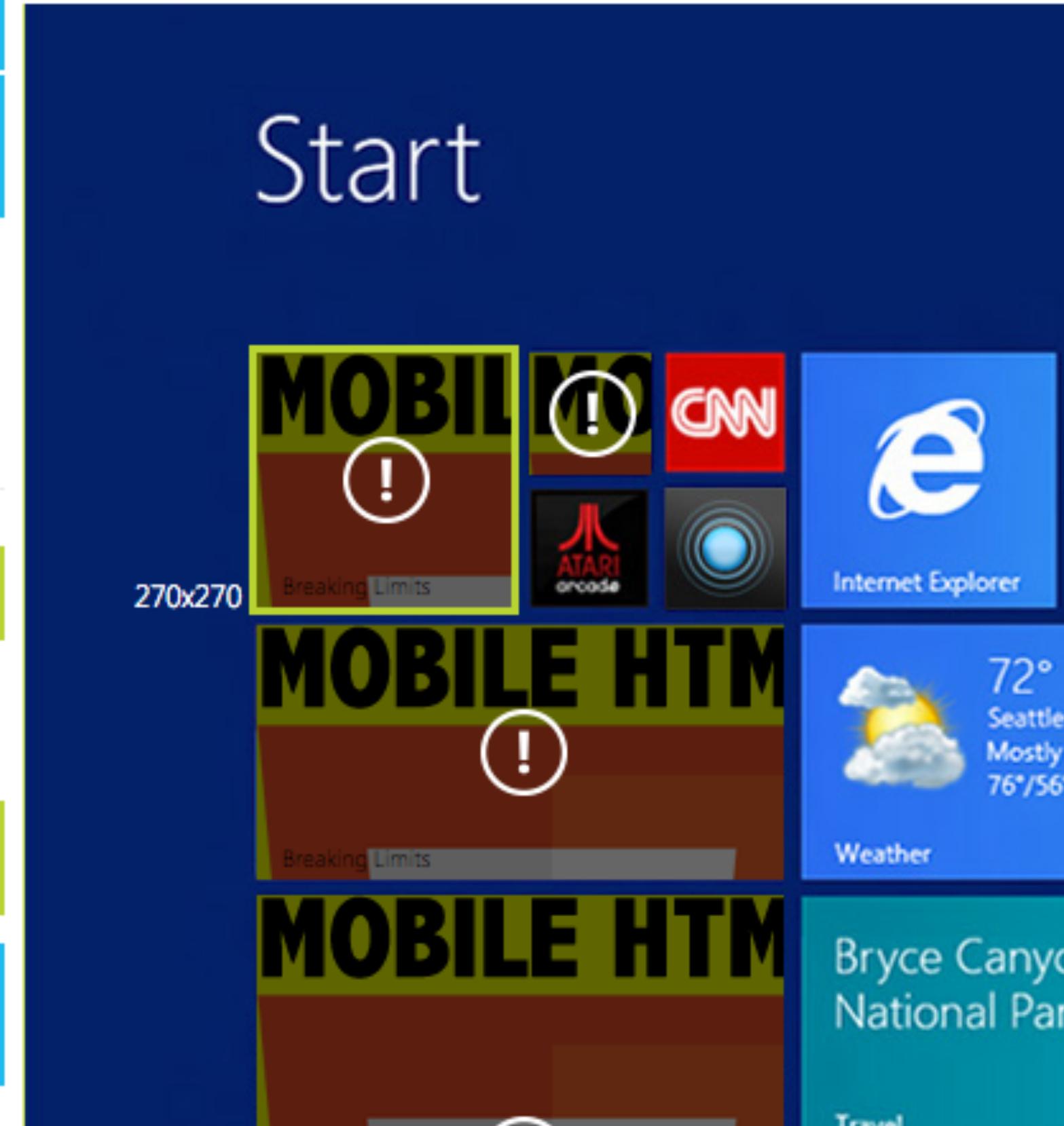
Put the URL to your RSS feed here Get feed →

Live updates will be created automatically from your RSS feed

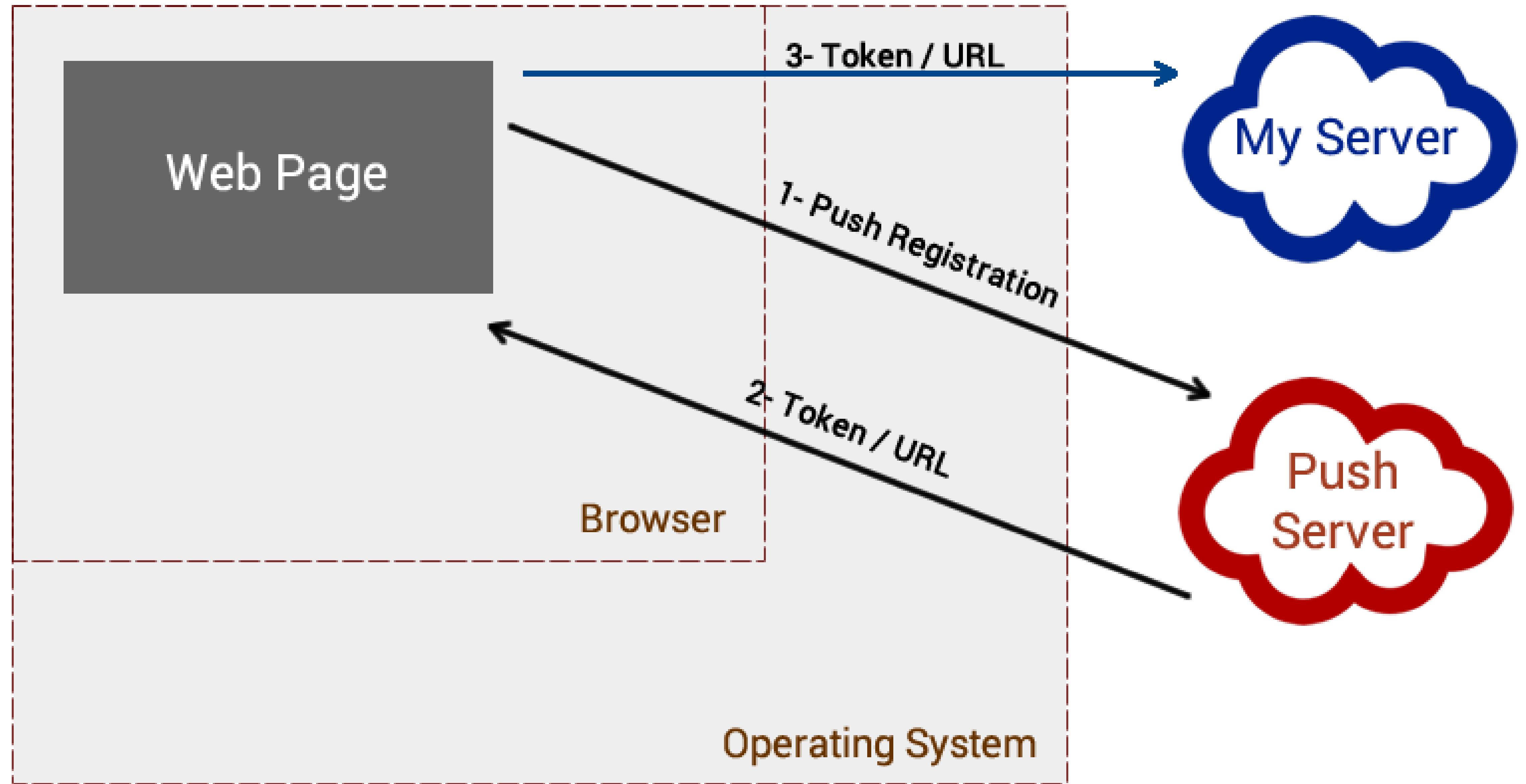
Next Step →

③ Get the Code! ?

Live Preview ?

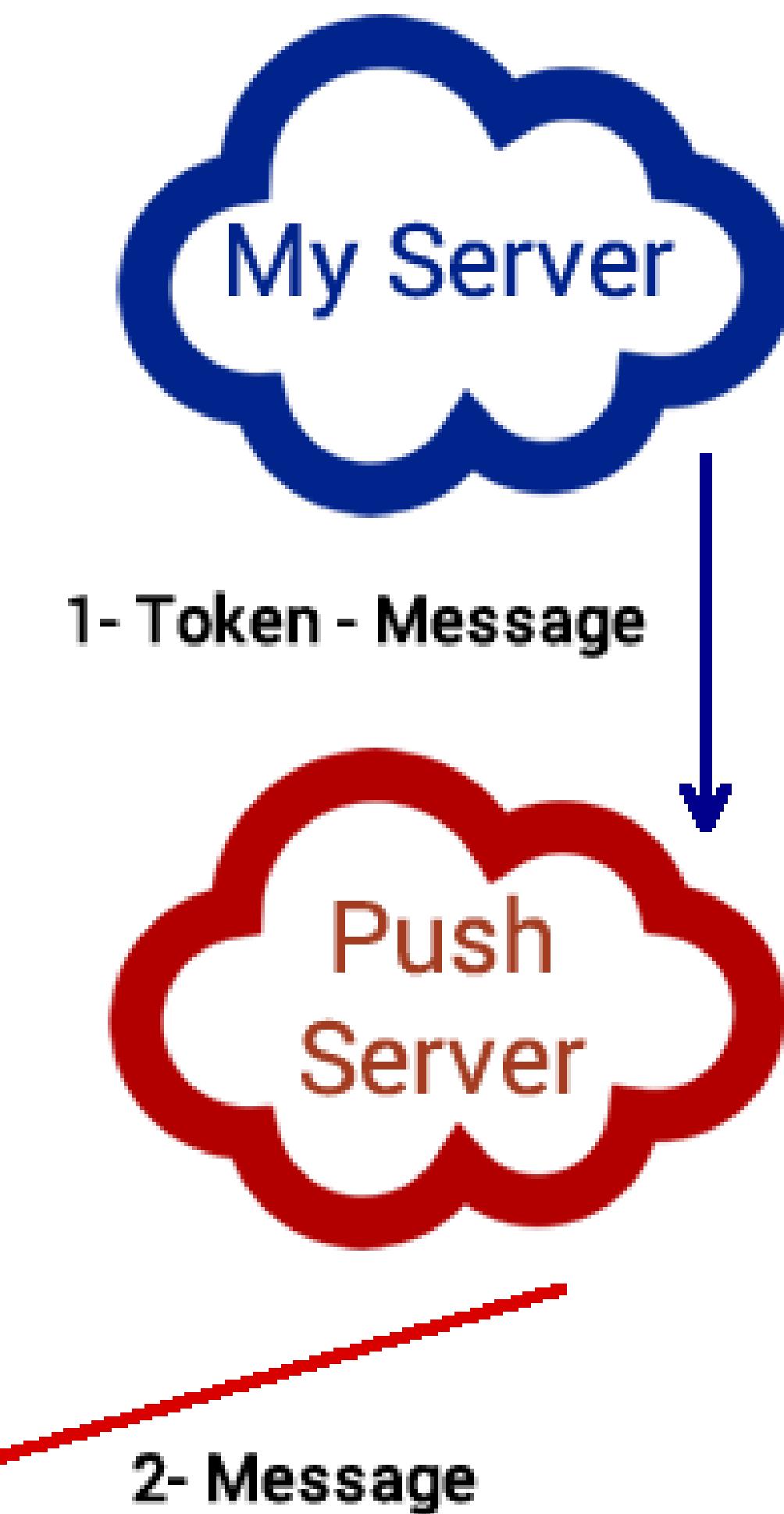
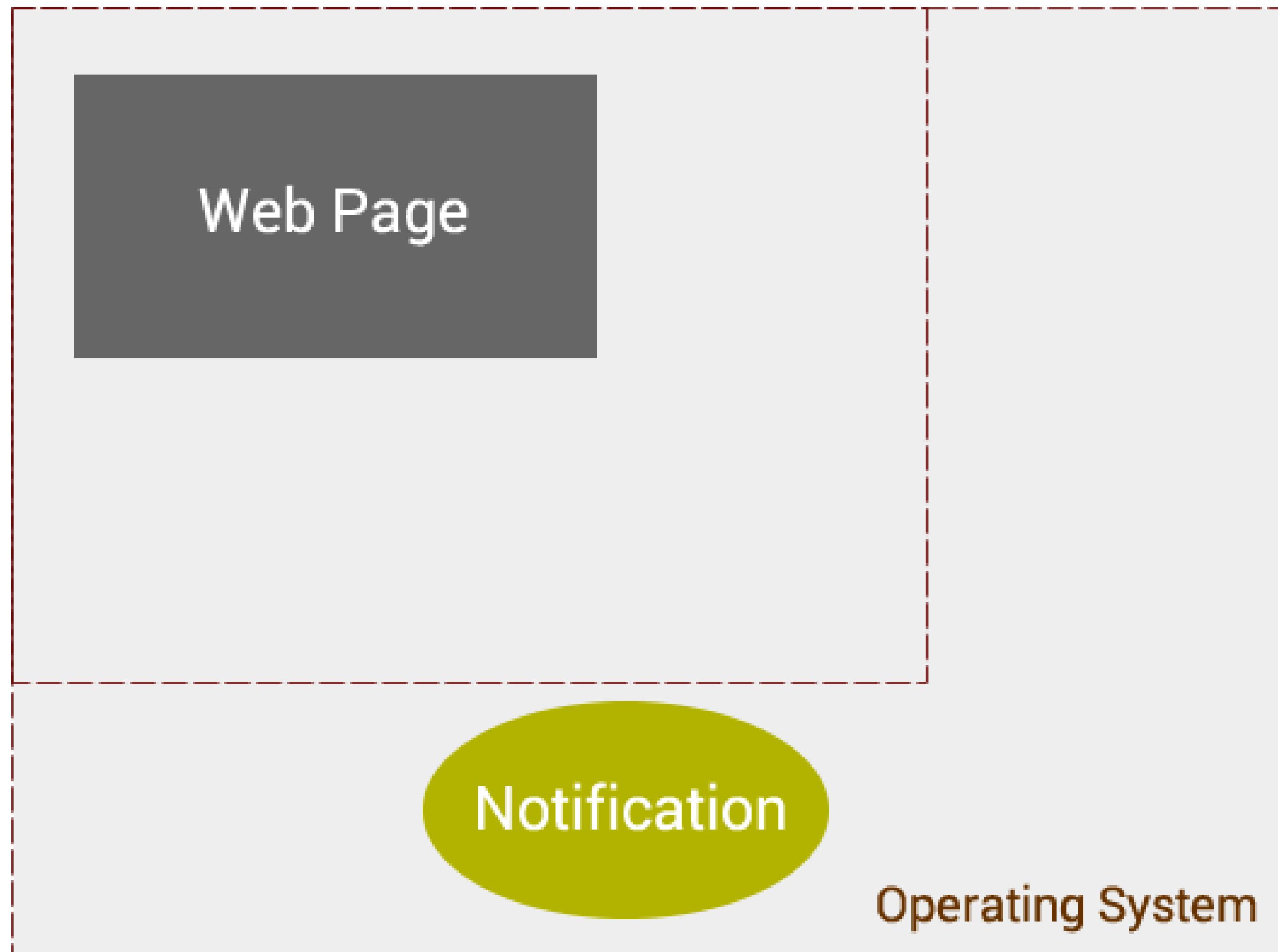


Subscribing

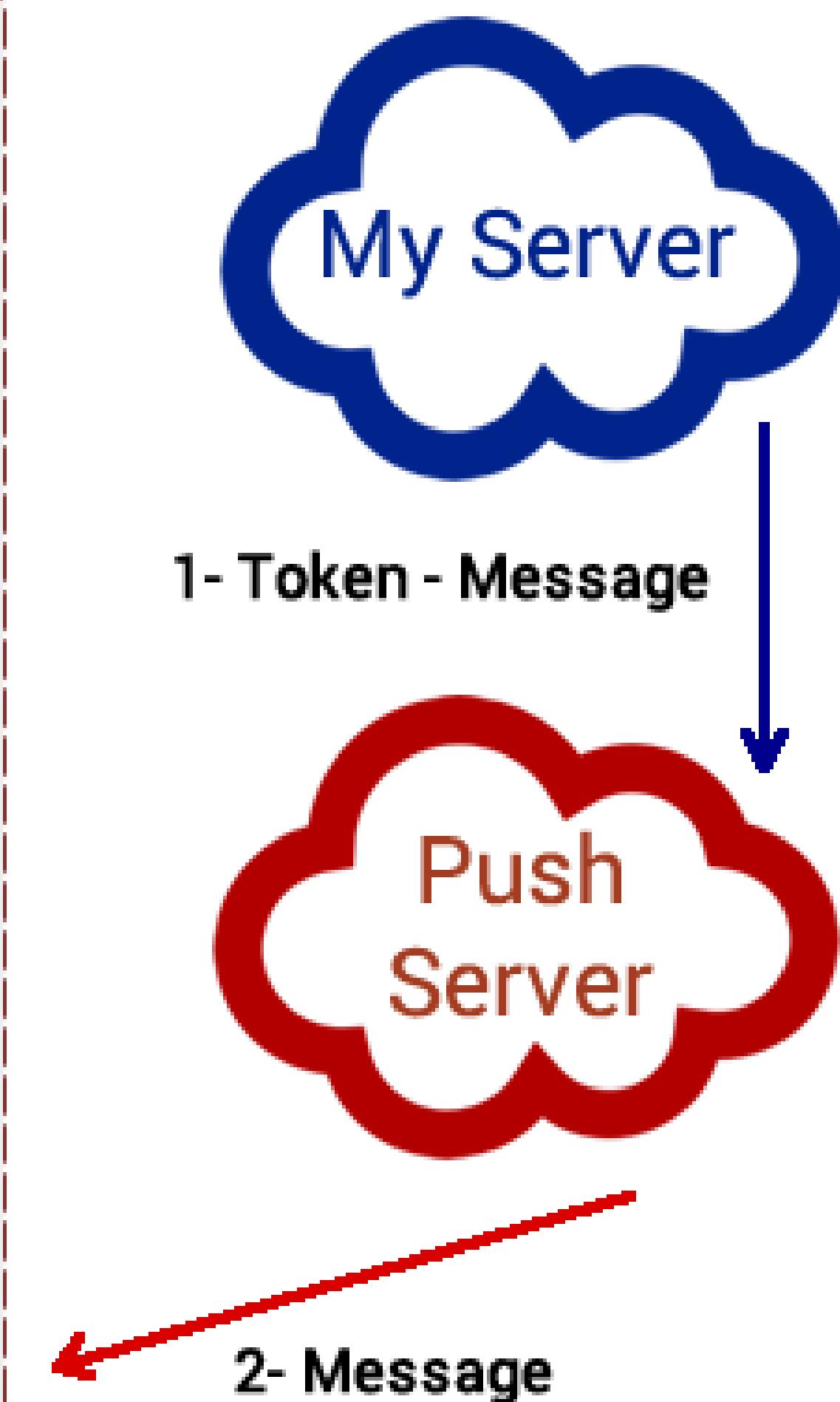
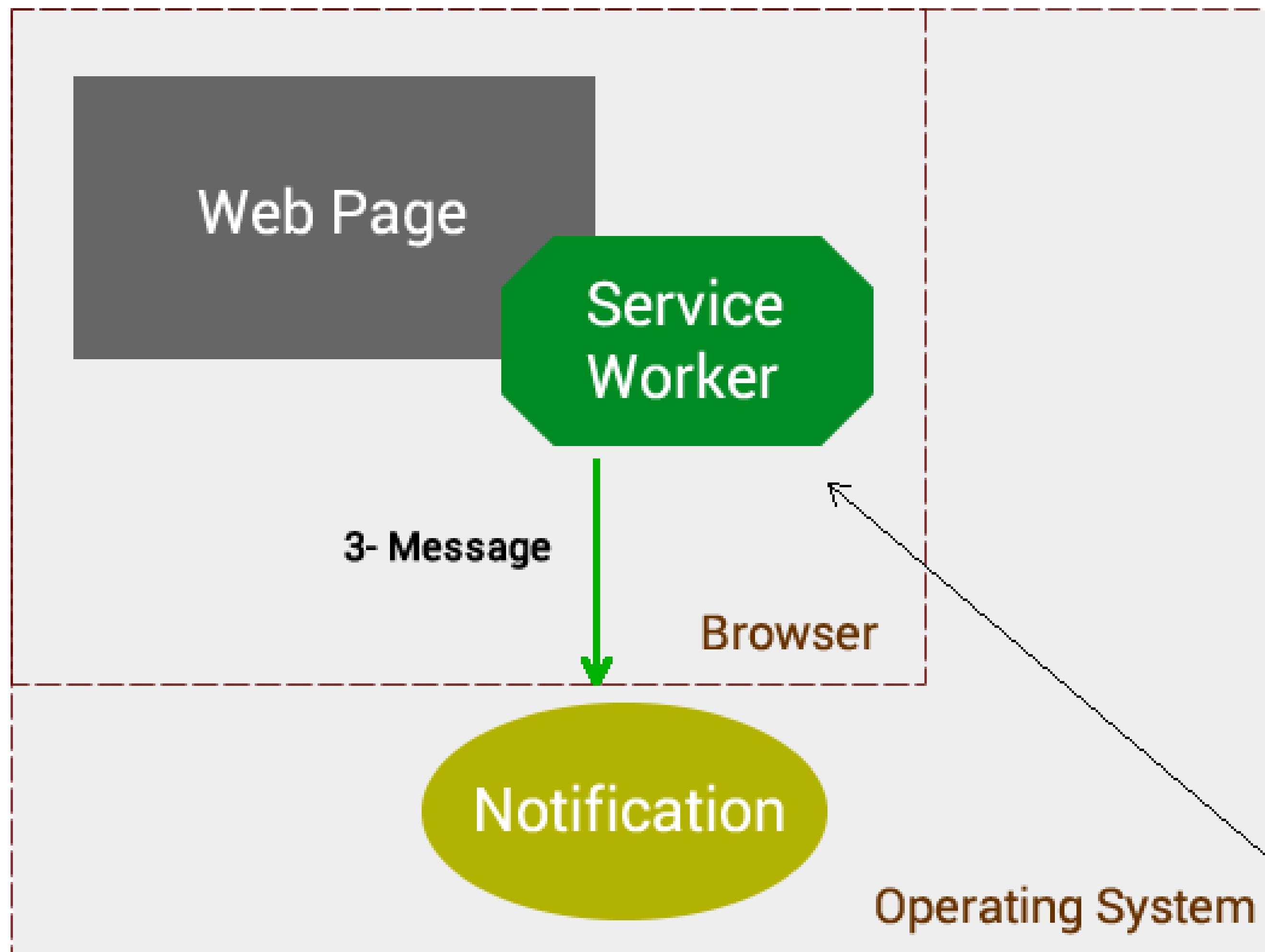


Delivering Messages

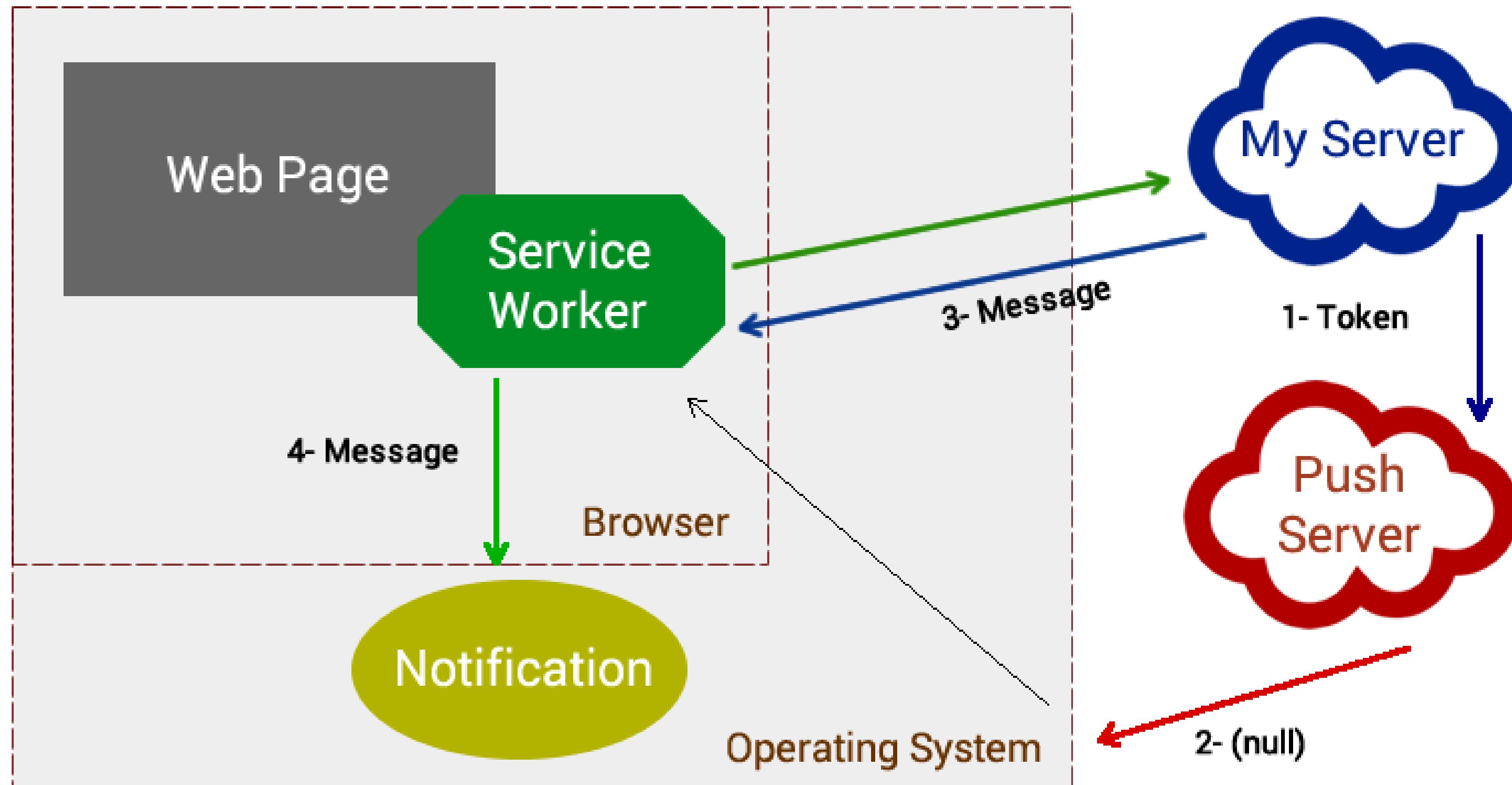
General



Web Push



Some browsers without payload

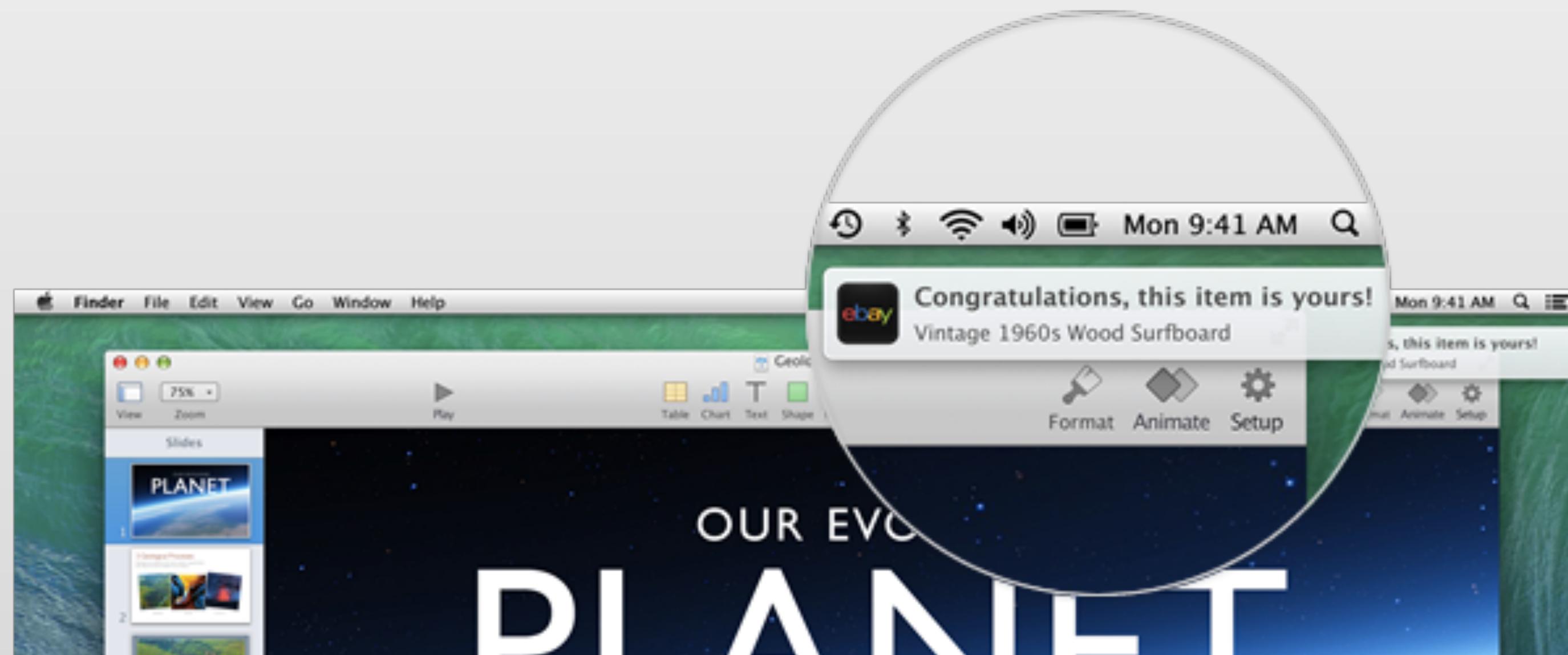


Push API

Push API

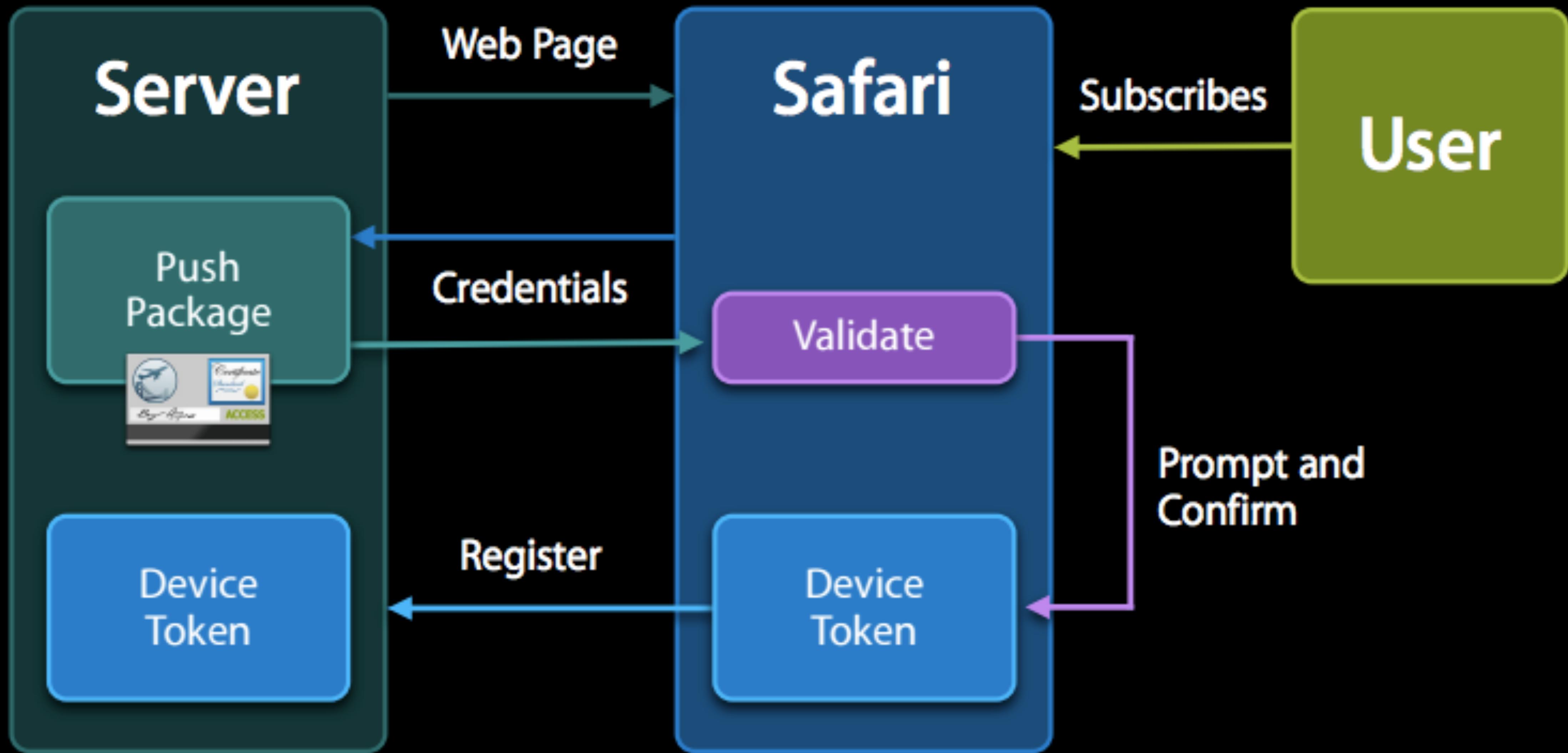
- 1- Service Workers (HTTPS)
- 2- Web Notifications only
- 3- Endpoint & optional key
- 4- Web Manifest for Chrome
- 5- Safari requirements

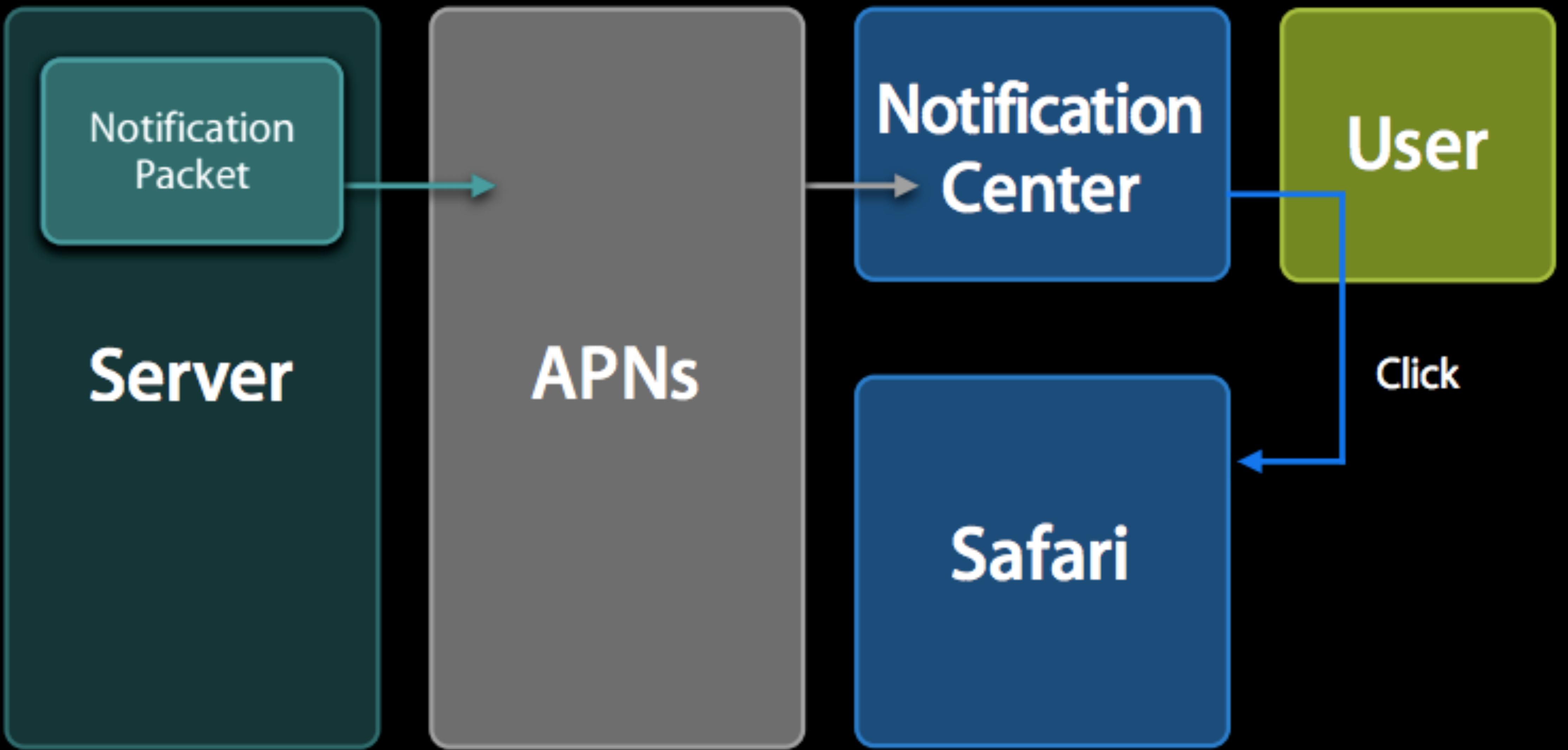
Safari Push



Safari Push Notifications for Websites

- 1- Apple Dev Account (\$99/year)
- 2- HTTPS
- 3- Generate Certificate
- 4- Listen for specific URLs





Safari Push Notifications for Websites

- 1- Create a Website Push ID
- 2- Get a Certificate
- 3- Generate Certificate
- 4- Create Push Package
- 5- Create /v1/pushPackages/<websitePushID>

Conclusion

- 1- Offline Detection
- 2- Data Storage
- 3- Application Cache
- 4- Service Workers
- 5- Web Push