

A network diagram background consisting of a central globe surrounded by a dashed circle, and a larger network of nodes and lines extending from the top right and bottom left corners. The globe is a purple outline showing the continents of North and South America. The network lines are light gray, and the nodes are small circles, some solid and some dashed.

PWA

Progressive Web App



“

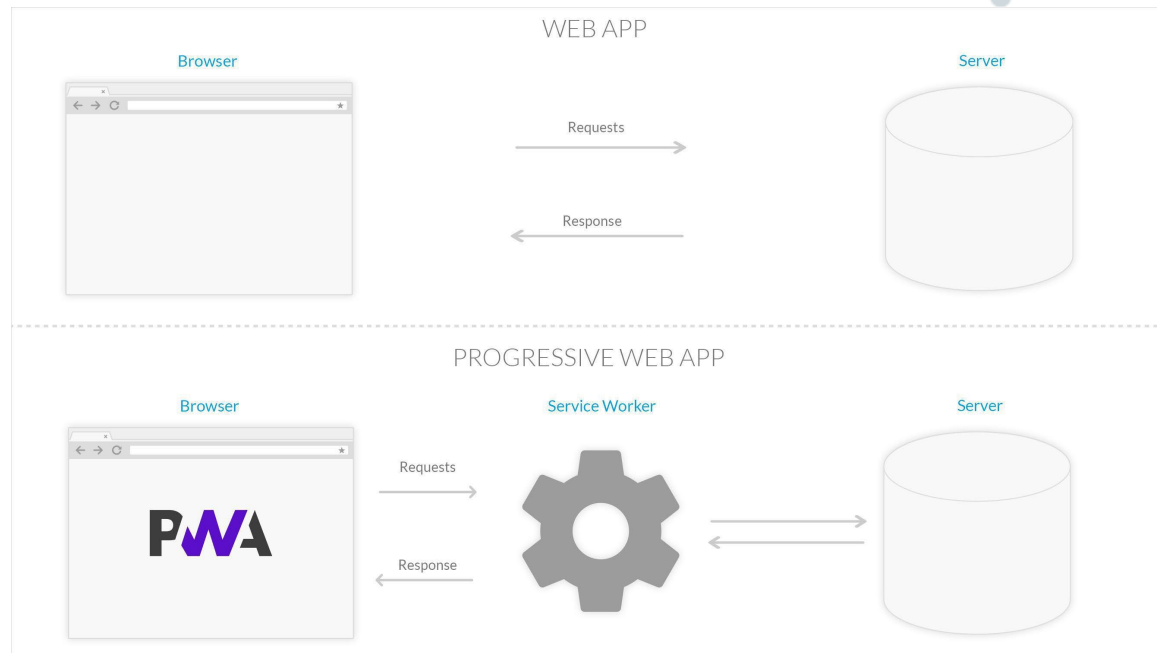
Il termine **Progressive Web App** (PWA, applicazioni web progressive) viene utilizzato per indicare una nuova metodologia per sviluppare software. Diversamente dalle applicazioni tradizionali, le progressive web apps sono un ibrido tra le normali pagine web (o siti web) e le applicazioni mobili. Questo nuovo modello di applicazioni cerca di combinare le possibilità offerte dalla maggior parte dei moderni browser con i benefici dell'utilizzo in mobilità.

https://it.wikipedia.org/wiki/Progressive_web_app

Few Requirements for PWA

- HTTPS
- Service Worker
- App Shell
- App manifest
- Connectivity-independent

PWA: Service Worker



- Intercepting network requests
- Caching
- retrieving resources from the cache
- delivering push messages

<https://developers.google.com/web/tools/workbox>

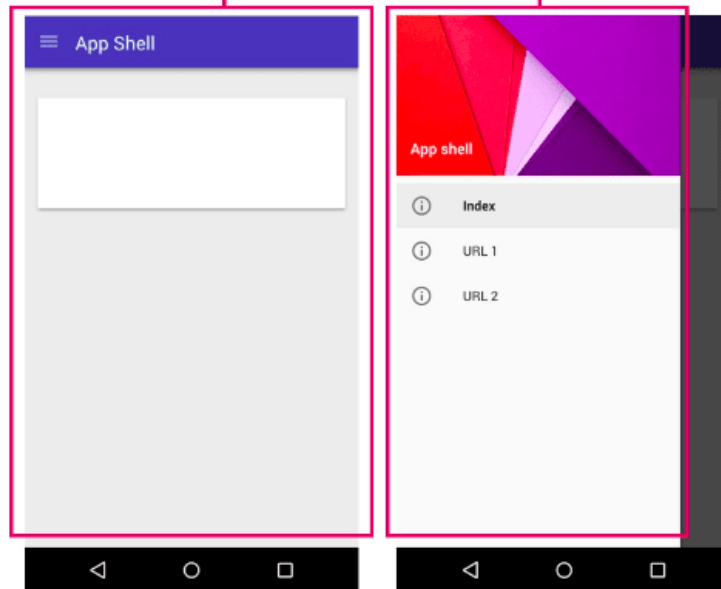
<https://ionicframework.com/pwa>

https://developers.google.com/web/fundamentals/codelabs/offline#top_of_page

https://blog.goodbarber.com/it/I-Service-Worker_a555.html

PWA: App shell

application shell



Cached shell loads **instantly** on repeat visits.

content



Dynamic content then populates the view

<https://developers.google.com/web/fundamentals/architecture/app-shell?hl=it>

PWA: Manifest

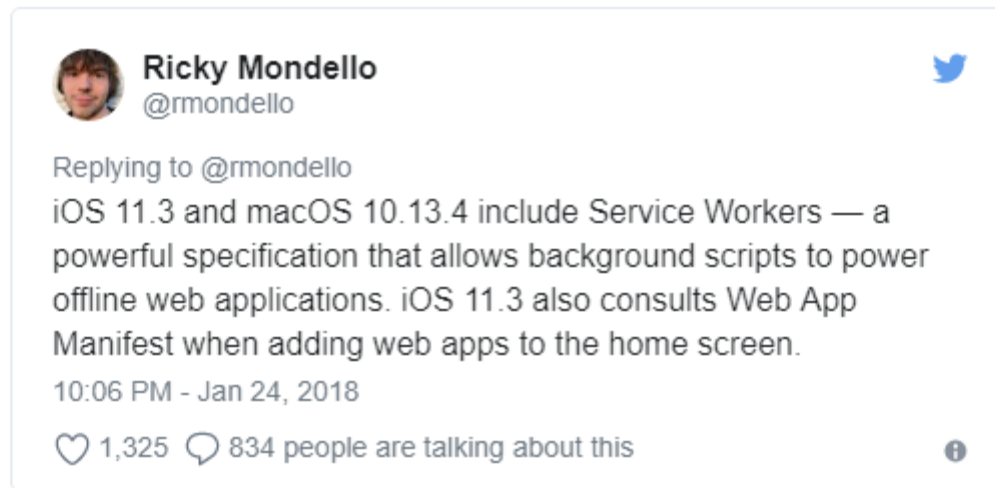
```
{
  "short_name": "AirHorner",
  "name": "Kinlan's AirHorner of Infamy",
  "icons": [
    {
      "src": "launcher-icon-1x.png",
      "type": "image/png",
      "sizes": "48x48"
    },
    {
      "src": "launcher-icon-2x.png",
      "type": "image/png",
      "sizes": "96x96"
    },
    {
      "src": "launcher-icon-4x.png",
      "type": "image/png",
      "sizes": "192x192"
    }
  ],
  "start_url": "index.html?launcher=true"
}
```



<https://developers.google.com/web/fundamentals/web-app-manifest/>
<https://developer.mozilla.org/en-US/docs/Web/Manifest>

PWA: Safari

Update : ios 11.3 supports web app manifest and service worker



Tweet about Service worker and manifest support

<https://medium.com/awebdeveloper/progressive-web-apps-pwas-are-coming-to-a-safari-near-you-216812aba5a>

PWA: Sample

Table of Known Patterns for Building PWAs

Use-case	Patterns	Examples
Publishing	Full SSR	https://babe.news/ https://ampbyexample.com https://ampproject.org
Publishing	Application Shell	https://app.jalantikus.com/ https://m.geo.tv/ https://app.kompas.com/ https://www.nfl.com/now/ https://www.chromestatus.com
Publishing	AppShell + SSR content for entry pages	https://react-hn.appspot.com https://www.polymer-project.org/1.0/
Publishing	Streams for body content / UI	https://wiki-offline.jakearchibald.com/wiki/The_Raccoons
Social	AppShell	https://web.telegram.org/
E-commerce	Application Shell	https://m.aliexpress.com/ https://kongax.konga.com/ https://m.flipkart.com (mobile/emulate) https://m.airberlin.com/en/pwa https://shop.polymer-project.org/
E-commerce	AppShell + SSR content for entry page	https://selio.com/ (try on mobile/emulate) https://lite.5milesapp.com/ (partial)
Conference	AppShell	https://events.google.com/io2016/schedule

Top PWA examples

Table of Contents

- I. Trivago Hotel Booking
- II. Pinterest
- III. Tinder
- IV. 9Gag
- V. OLX
- VI. Starbucks
- VII. Forbes

<https://appmaker.xyz/pwa-examples-successful-progressive-web-apps/>

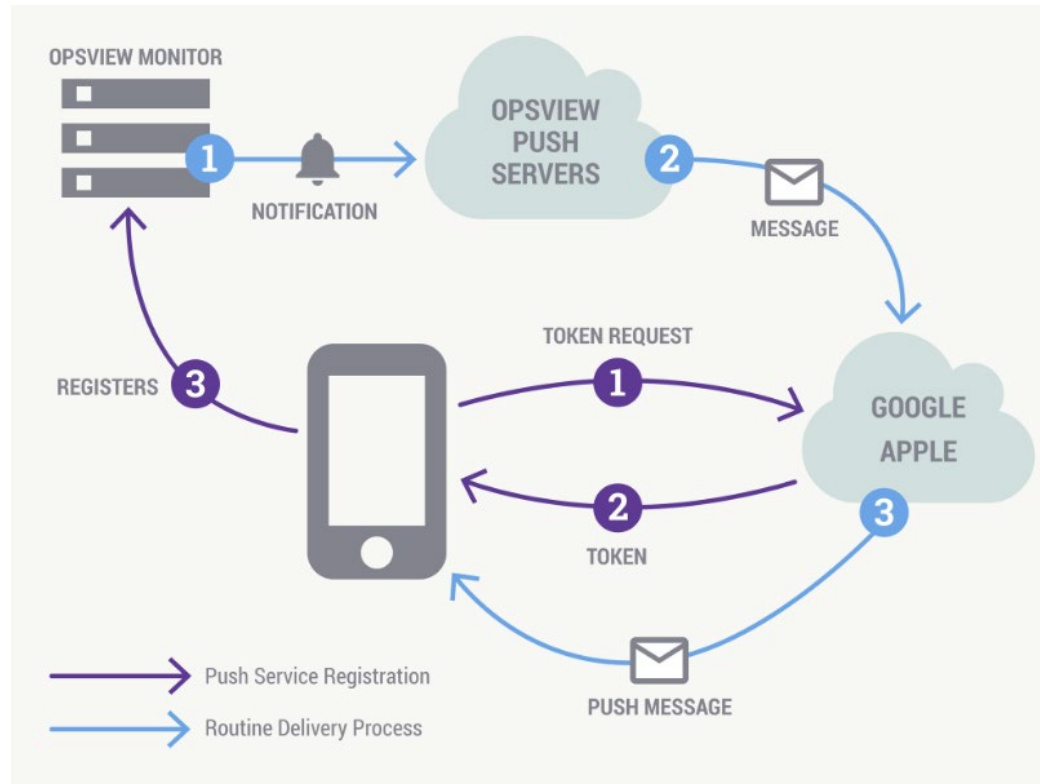
https://developers.google.com/web/ilt/pwa/introduction-to-progressive-web-app-architectures#table_of_known_patterns_for_building_pwas

Push Notification

Push messages enable you to bring information to the attention of your users even when they're not using your website/app.

<https://developers.google.com/web/ilt/pwa/introduction-to-push-notifications>

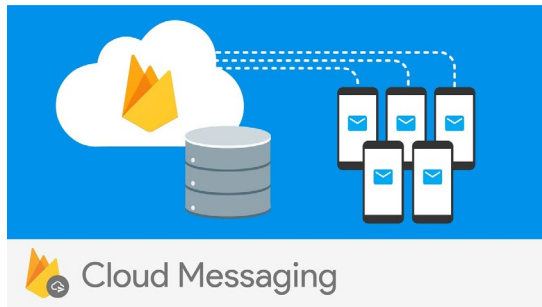
Push Service



<https://capacitorjs.com/docs/apis/push-notifications>

<https://knowledge.opsview.com/docs/getting-started-with-push>

Esempio di notifiche con Ionic e FireBase



Completamente free ma:

Maximum message rate to a single device

You can send up to 240 messages/minute and 5,000 messages/hour to a single device. This high threshold is meant to allow for short term bursts of traffic, such as when users are interacting rapidly over chat. This limit prevents errors in sending logic from inadvertently draining the battery on a device.

! Caution: Do not routinely send messages near this maximum rate. This could waste end users' resources, and your app may be marked as abusive.

Upstream message limit

We limit upstream messages at 1,500,000/minute per project to avoid overloading upstream destination servers.

We limit upstream messages per device at 1,000/minute to protect against battery drain from bad app behavior.

<https://www.freecodecamp.org/news/how-to-get-push-notifications-working-with-ionic-4-and-firebase-ad87cc92394e/>

<https://capacitor.ionicframework.com/docs/guides/push-notifications-firebase/>

Esempio di notifiche con FireBase per servizi backend

```
Node.js  Java  Python  Go  C#  REST

// This registration token comes from the client FCM SDKs.
var registrationToken = 'YOUR_REGISTRATION_TOKEN';

var message = {
  data: {
    score: '850',
    time: '2:45'
  },
  token: registrationToken
};

// Send a message to the device corresponding to the provided
// registration token.
admin.messaging().send(message)
  .then((response) => {
    // Response is a message ID string.
    console.log('Successfully sent message:', response);
  })
  .catch((error) => {
    console.log('Error sending message:', error);
  });
```

<https://firebase.google.com/docs/admin/setup>

<https://firebase.google.com/docs/cloud-messaging/send-message>