# PWA

## Andre Wollny

## Batman & Robin

# The Case

Gotham City – Fights between 3 groups of workers – Riots starting

**Mobile**

Monkeys

vs

**Web**

Winners

vs

**Desktop**

Dynamite

# The Case

## Gordon Calling Batman

# The Case

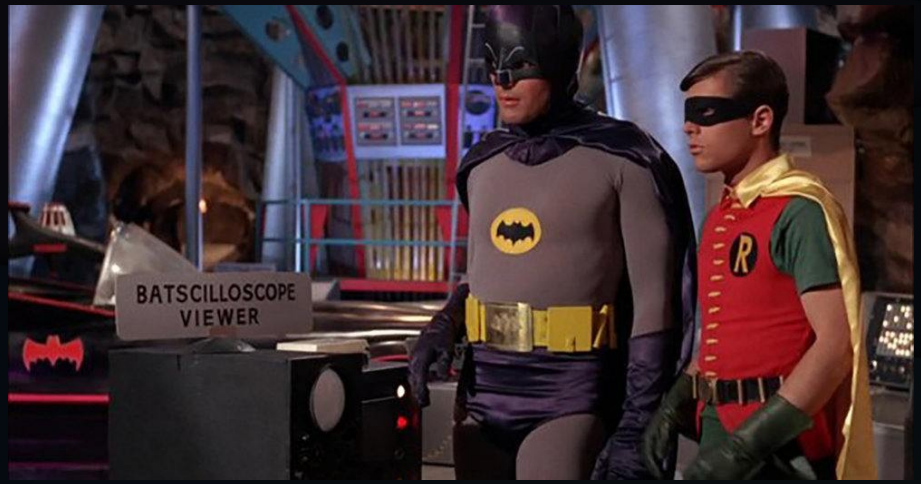
Batman calms down the situation
But… Wait… Message from Riddler

?

Don't put the blame on me.
Write once run everywhere  is the key!

# The Case

## First Attempts

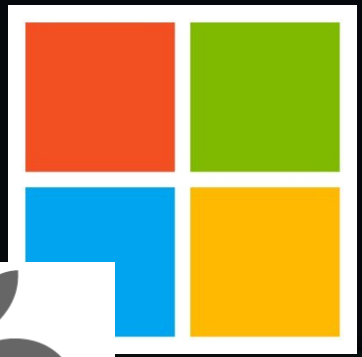


# The Case

Not really successfull

# The Case

New try – calling google – working together

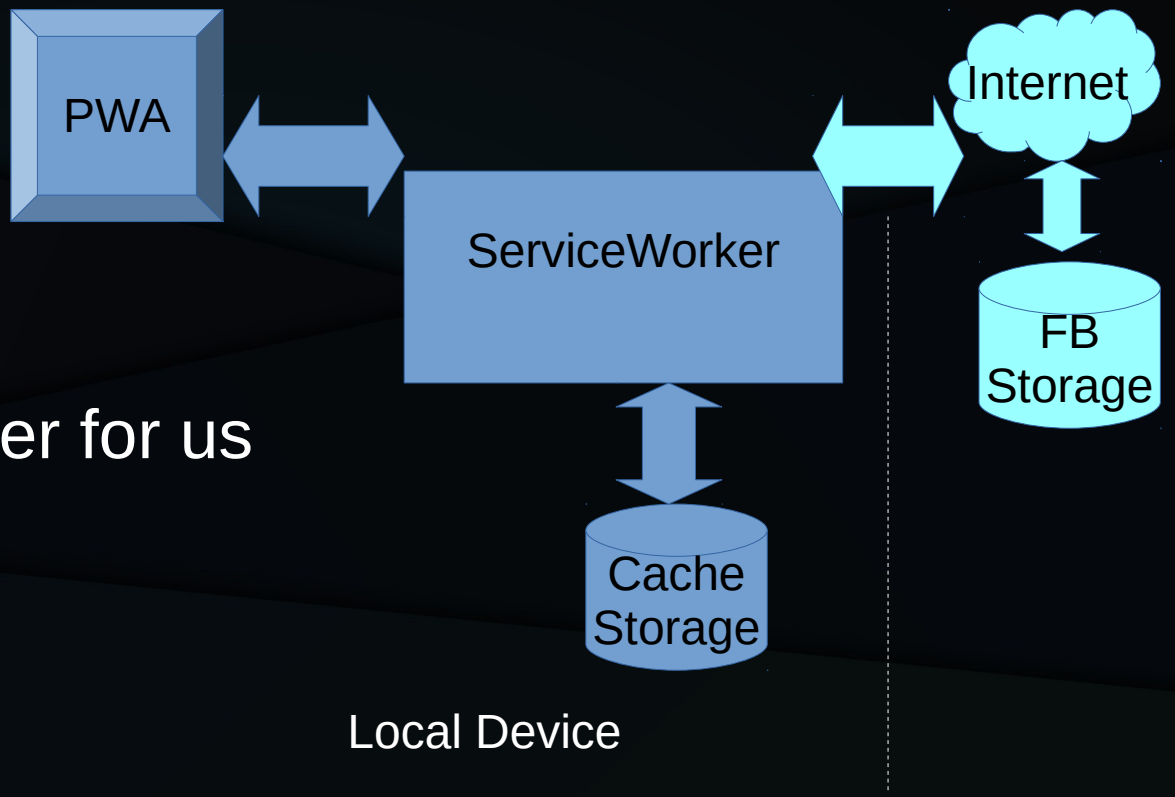


# The Solution PWA - Characteristics

- Reliable (offline – no dinosaur)
- Performant / Fast
- Safe (HTTPS)
- Notifications
- Installable / Enganging
- Fresh (Up to date)

No need for a store

# The Solution PWA – HOW?

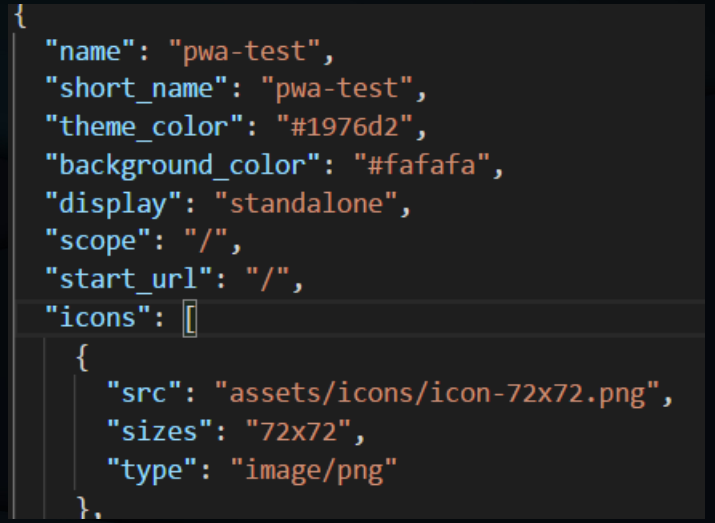



Service Workers
“Proxy“- Decision Maker for us
“Brain“

# The Solution PWA – HOW?

Manifest
→ tells browser how to handle web app

- Name
- Icons
- StartUrl



```
{
  "name": "pwa-test",
  "short_name": "pwa-test",
  "theme_color": "#1976d2",
  "background_color": "#fafafa",
  "display": "standalone",
  "scope": "/",
  "start_url": "/",
  "icons": [
    {
      "src": "assets/icons/icon-72x72.png",
      "sizes": "72x72",
      "type": "image/png"
    },
```

# The Solution PWA – HOW?

OK Robin..we are using Angular
Have a look

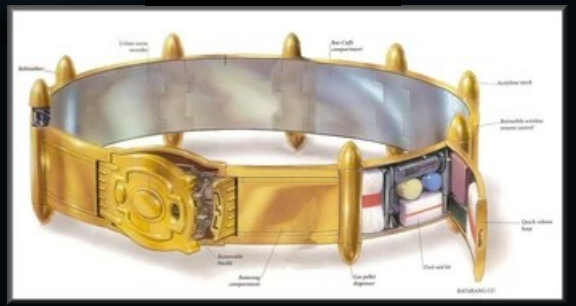
Time for the Bat Belt!

# The Solution PWA – HOW?

**Angular 5**
Service Worker beta
Lots of manual steps
Breaking changes

**Angular 6**
ng add @angular/pwa

→ Much more easy

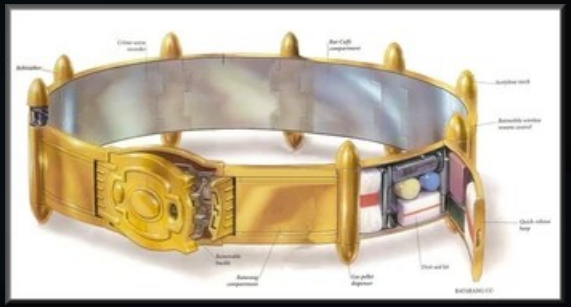


Smaller bundle sizes

Angular Elements

# The Solution PWA – HOW?

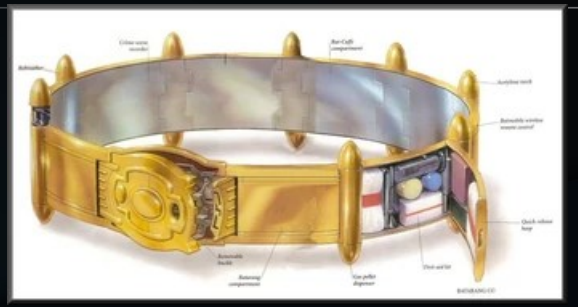
**What** is the *belt* doing?



- Updating package.json
  *"@angular/pwa": "^0.6.1"*
- Creating new Config File
  *ngsw-config.json*: Angular Service Worker package
- Creating manifest
  ./src/manifest.json

# The Solution PWA – HOW?

**What** is the *belt* doing?



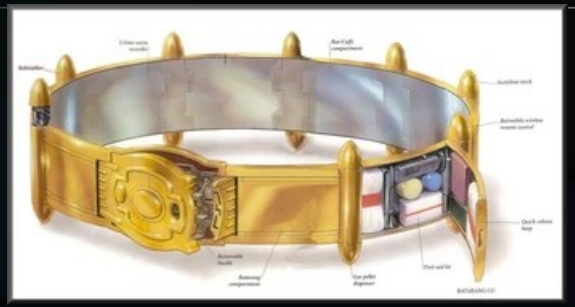
- Register Service Worker (Bootsrap)
  *src*/app/app.module

  ***ServiceWorkerModule.register('/ngsw-worker.js', { enabled: environment.production })***

- Something more
  (assets/icons)

# The Solution PWA – HOW?

ServiceWorker-Configuration (*ngsw-config.json)*



**Groups for assets (img) and data**

**Cache**

maxAge: timelimit (1 hour) maxSize: limit count (20)
timeout: 10s

**stragety**
*freshness*
(Only if the network times out -timeout-, does the request fall back to the cache)
*performance*
(If a resource exists in the cache, the cached version is used)

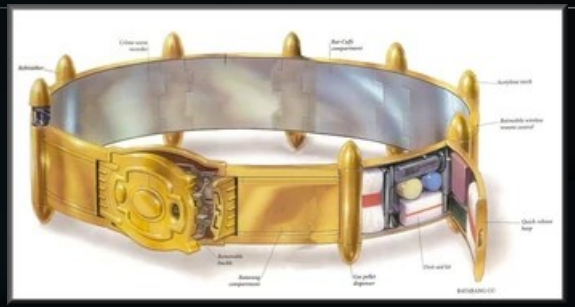
**Notifications** (Updates, Messages)

**Router** aware (groups of urls)

# The Solution PWA – HOW?

Example

```
"dataGroups": [{
    "name": "api-freshness",
    "urls": [
      "/new"
    ],
    "cacheConfig": {
      "maxSize": 100,
      "maxAge": "1h",
      "timeout": "10s",
      "strategy": "freshness"
    }
  }, {
    "name": "api-performance",
    "urls": [
      "/",
      "/jobs","/show"
    ],
    "cacheConfig": {
      "maxSize": 100,
      "maxAge": "1d",
      "strategy": "performance"
    }
  }]
```



# The Solution PWA – HOW?

**Addtional Help**

- Youtube (older stuff)

  Google io 17

  https://www.youtube.com/watch?v=C8KcW1Nj3Mw

  Angular and Service Workers

  https://www.youtube.com/watch?v=8rmBA9Asbfw

- Bring PWA into Stores
  MS is crawling
  https://medium.freecodecamp.org/i-built-a-pwa-and-published-it-in-3-app-stores-heres

- Support Status
  https://jakearchibald.github.io/isserviceworkerready/index.html#moar

- PWA Builder
  https://www.pwabuilder.com/

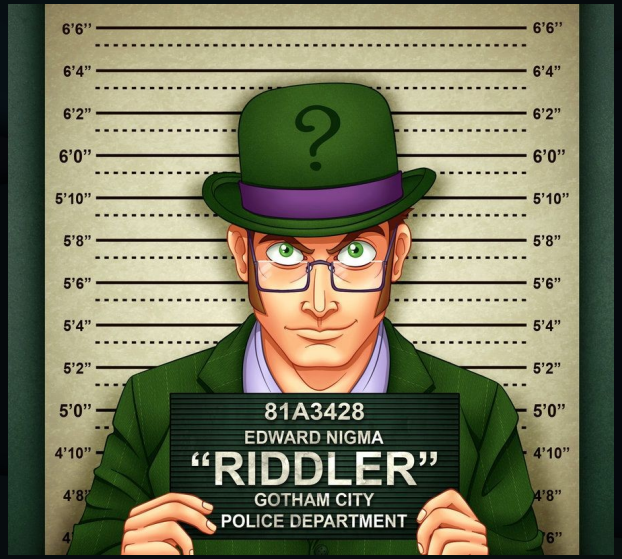
# Peace in Gotham? Future

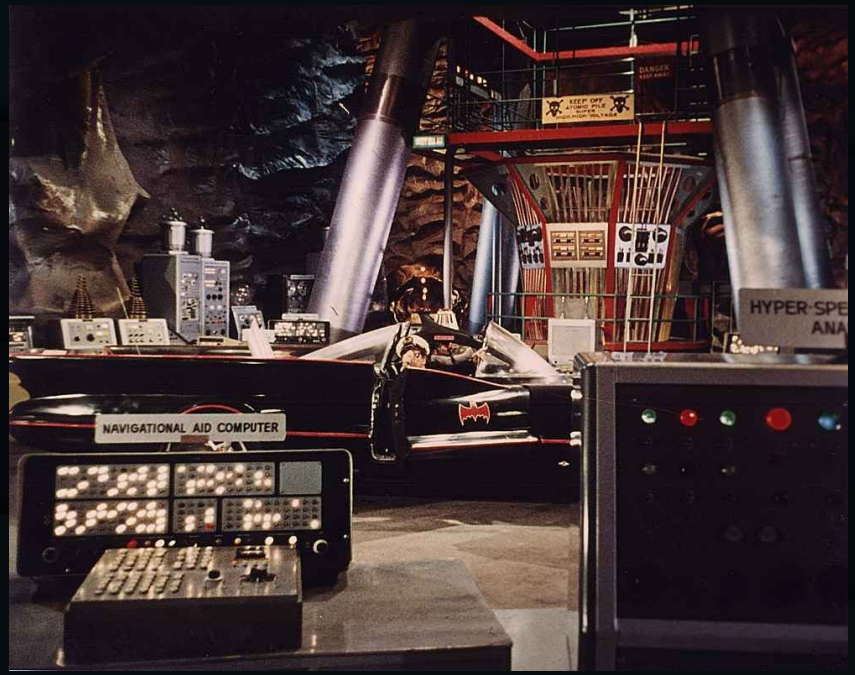
→ Every Angular App is a PWA

More support to come

Downside / still to improve:

- switch to dist
- own http server
- more configuration
- sometimes still feels unnatural



# Peace in Gotham? Live Demo

Creating standard Angular app
and convert to PWA