Angular Universal server side rendering vs. build prerendering

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Single page apps

- No html - dynamically rendered at client
- No content for crawlers
- UI delay / flickering

Angular Universal

https://github.com/angular/universal

Allows server side prerendering (platform-browser / platform-server)

NodeJS (Express, Hapi) and ASP.NET engines

Part of core from 4.0 + , engines are packages

Some gotchas:

- window, document, navigator and other browser types don’t exist on server
- No direct manipulation of nativeElement. Use *Renderer2*
- setTimeout, rxjs timeouts….

How to...

https://github.com/angular/universal-starter

- Two apps in angular-cli.json
- main.ts (app.module.ts) vs main.server.ts (app.server.module.ts)
- Scripts:
  - *start*: ng serve
  - *build:dynamic*: builds both Angular apps, webpacks prerender.ts and server.ts
  - *build:static*: dynamic + generate all paths from static.paths.js (using prerender.ts)
  - *serve:dynamic*: serves prerendered static files + dynamically renders unknown paths using node and server.ts
  - *serve:static*: serves prerendered static files using http-server

Further

- Preboot
  - Transfer state (events) from before SPA loads into SPA (replay)
  - https://github.com/angular/preboot
  - Broken at the moment
- Rehydration of DOM elements/CSS rendered on the server
- Rendering speed
- ...