Reducing your site's first load time with node.js

Problems with modern SPA applications

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Why is this a problem?

What happens when we load a modern website ?

Was it always a problem?

How do companies deal with it?

How can we deal with it?

Why is this a problem?

- Modern websites tend to use SPA frameworks like Angular, React, Vue etc.
- Very basic HTML structure sent to clients
- JavaScript then is renders the site's content
- **Slower loading times for clients**
- **SEO - search engines not always execute Javscript**

London

Whether you are visiting London for the first time or coming back for a special occasion, you'll discover a city full of unforgettable landmarks and exciting things to do.

Now: 2° In two weeks: 12°   £83

Rome

Rome, a city bursting with attractions, events and activities for the whole family
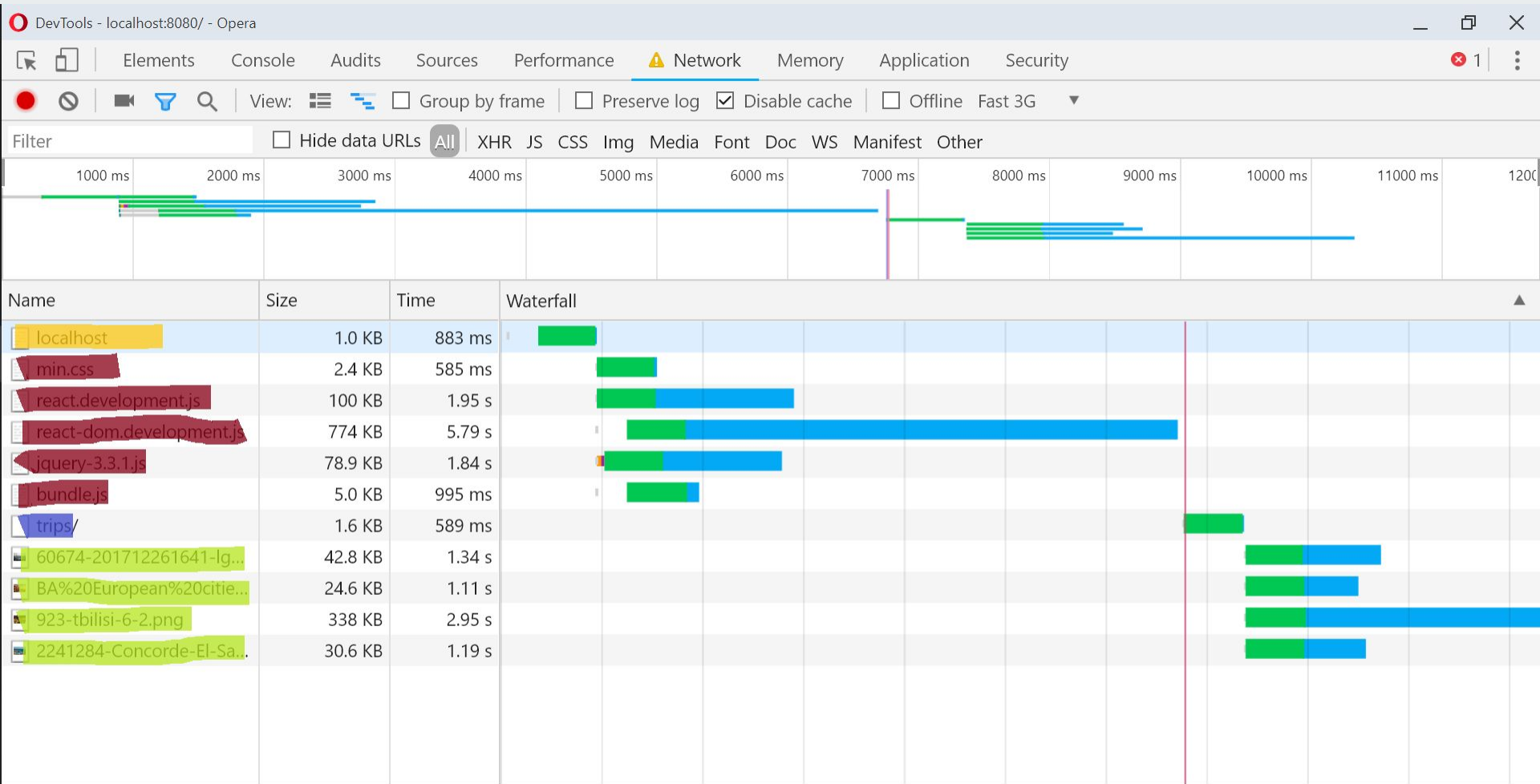
Now: 24° In two weeks: 28°   £140

Tbilisi

Sharm el Sheikh

What happens when we load a modern website ?

DevTools - localhost:8080/ - Opera

Elements | Console | Audits | Sources | Performance | ⚠ Network | Memory | Application | Security

❌ 1

View: | ☐ Group by frame | ☐ Preserve log | ☑ Disable cache | ☐ Offline | Fast 3G ▼

Filter | ☐ Hide data URLs | **All** | XHR | JS | CSS | Img | Media | Font | Doc | WS | Manifest | Other

1000 ms	2000 ms	3000 ms	4000 ms	5000 ms	6000 ms	7000 ms	8000 ms	9000 ms	10000 ms	11000 ms	1200

Name	Size	Time	Waterfall
localhost	1.0 KB	883 ms	
min.css	2.4 KB	585 ms	
react.development.js	100 KB	1.95 s	
react-dom.development.js	774 KB	5.79 s	
jquery-3.3.1.js	78.9 KB	1.84 s	
bundle.js	5.0 KB	995 ms	
trips/	1.6 KB	589 ms	
60674-201712261641-lg...	42.8 KB	1.34 s	
BA%20European%20citie...	24.6 KB	1.11 s	
923-tbilisi-6-2.png	338 KB	2.95 s	
2241284-Concorde-El-Sa...	30.6 KB	1.19 s	

DEMO TIME no 1

Was it always a problem?

Not really, no.

.NET Web Forms, .NET MVC, Laravel (php) etc etc… all would send rendered html directly to clients.

This of course had its own problems and disadvantages.

How do companies deal with it?

- Nothing. Some companies just don't consider this to be a problem.
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- Reduce the amount of data their website is loading on the homepage.
-
- Use a web framework to generate the HTML server side (PHP anyone?)
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- **Prerender their JS app on the server**

Prerendering app (also called as SSR - server side rendering)

The good:

(almost) No changes needed in your JS App

Fairly good support in biggest frameworks

Can do it on your own too

The bad

Need for additional resources - a server that will perform the prerendering.

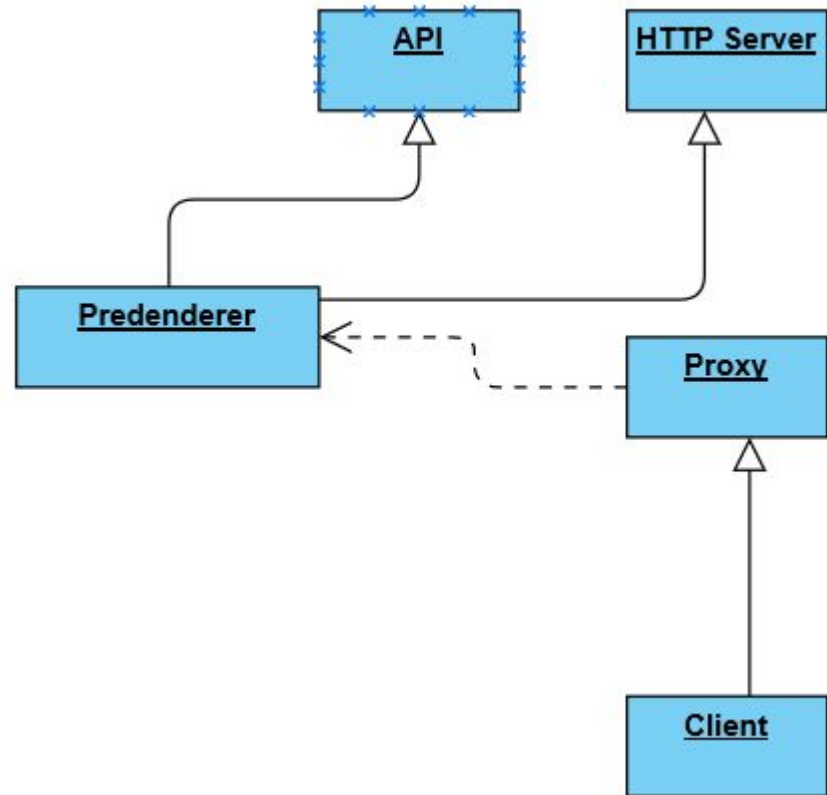One more potential point of failure - could become difficult to diagnose issues.

The ugly

Becomes really complex really fast.

What if you support different languages? What if the user is logged in?
What if your rendering server? What about cookies? …

Example infrastructure

DEMO TIME no2

Filter | ☐ Hide data URLs | All | XHR JS CSS Img Media Font Doc WS Manifest Other

	1000 ms	2000 ms	3000 ms	4000 ms	5000 ms	6000 ms	7000 ms	8000 ms	9000 ms

Name	Size	Time	Waterfall
localhost	3.2 KB	589 ms	
react.development.js	100 KB	3.31 s	
min.css	2.4 KB	580 ms	
react-dom.development.js	774 KB	8.49 s	
jquery-3.3.1.js	78.9 KB	3.06 s	
bundle.js	5.4 KB	975 ms	
60674-201712261641-lg2.jpg	42.8 KB	2.31 s	
BA%20European%20cities.jp...	24.5 KB	2.19 s	
923-tbilisi-6-2.png	338 KB	5.74 s	
2241284-Concorde-El-Salam...	30.6 KB	1.39 s	

10 requests | 1.4 MB transferred | Finish: 9.09 s | DOMContentLoaded: 9.19 s | Load: 9.22 s

⋮ Console What's New ✕

Worth it?

… probably - depends on the use case - no easy answer.

Questions, thoughts ?

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