Web Speed: Comparing Current Technology Impacts on Loading Time

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Motivations

React JS

Comparing past front and backend technology, currently there are many API supporting web loading

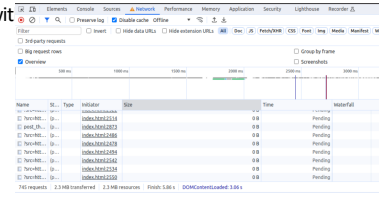
However, as technology developed the websites become more complex than before
Therefore, the load time might be slower than before.

About the load time, the size of loading files must be considered also.

In this circumstance, by showing the current and old versions of website, showing the effective web loading mechanism is available.

In addition, compare which file type effect vastly and showing.

For example, past naver.com loaded in about 10s wit



Assumption:

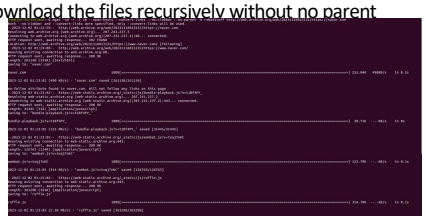
1. Current Web page's code performance has been enhanced
2. JS, image, CSS file size could be the effect to the web loading time

Methodology

For fair comparing, run on the local and load resources from the local also
Selected web: Naver, Yahoo, Rediff, Youtube, 360

1. Scrape each website from web archive using wget command

Challenge: Web archive site prohibited the scraping
Sol: download the files recursively without no parent

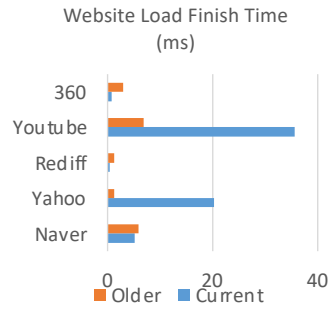


2. Using open source command webhttrack, store the scrpaed files into local

3. Open the files in the chrome and analyze the load finish time

Using tc qdisc add dev lo root handle 1:0 netem delay 50ms

4. Analyze the file sizes and load time



Result

1. Websites transferred resources size and time

	Current 360.com	2013 360.com	Current Rediff.com	2013 Rediff.com	Current youtube.com	2013 youtube.com	Current Yahoo.com	2013 Yahoo.com	Current naver.com	2013 naver.com
Time	2.982 s	9795 ms	2784 ms	1.0711 s	17.074 s	1.523 s	13.215 s	1.0837 s	3.456 s	None
File Transferred	14.2 MB	1.3 MB	140 KB	688 KB	19.8 MB	1.2 MB	2.8 MB	1.8 MB	4.6 MB	2.3 MB
Size of CSS	52.8 KB	84.9 KB	0 KB	45 KB	45.2 KB	423 KB	592 KB	86.6 KB	1.3 MB	110 KB
Size of JavaScript	1.2 MB	942 KB	79 MB	508 KB	18.9 MB	562 KB	12.5 KB	783 KB	1.2 MB	731 KB
Size of image file	12.8 MB	257 KB	12.2 KB	18 KB	3.7 KB	37.5 KB	276.8 KB	634 KB	1.3 MB	1.2 MB

2. Run 10 times for each websites and get average load time

Analysis

1. As file size bigger, the time get more than before
2. The prior affect to web load time will be Image > CSS > JavaScript
3. In order to quickly load the web, the web has to solve the loading image and css technology

Limitation

Still, modifying the resources into local files was not perfect, at all.
In addition, one website could not analyze the load time since it keep refresh the web itself.
In some part, such as JavaScript, they load the resources form online.
Although I set the Chrome into offline mode, the JavaScript file try to reach to the DNS server.