

HTML 5

Application Cache

HTML



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<https://github.com/swacademy/HTML5>

What is Application Cache?

- Means that a web application is cached, and accessible without an internet connection.
- Gives an application three advantages:
 - Offline browsing - users can use the application when they're offline.
 - Speed - cached resources load faster.
 - Reduced server load - the browser will only download updated/changed resources from the server.



manifest File

- Is a list of files that define what files should be included for your offline application.
- To work offline, an application needs only a manifest file.
- Is a simple text file, which tells the browser what to cache (and what to never cache).
- Once the manifest is loaded or updated, it triggers an update on the **applicationCache** object.

manifest File (Cont.)

- Has three sections:

- **CACHE MANIFEST** - Files listed under this header will be cached after they are downloaded for the first time
- **NETWORK** - Files listed under this header require a connection to the server, and will never be cached
- **FALLBACK** - Files listed under this header specifies fallback pages if a page is inaccessible

manifest File (Cont.)

■ CACHE MANIFEST

- The first line, **CACHE MANIFEST**, is required.

```
1 CACHE MANIFEST  
2  
3 #version 2  
4  
5 # 명시적으로 캐시된 파일들  
6 /theme.css  
7 /logo.gif  
8 /main.js  
9
```

- When the manifest file is loaded, the browser will download the three files from the root directory of the web site.
- Then, whenever the user is not connected to the internet, the resources will still be available.

manifest File (Cont.)

■ NETWORK

- Below specifies that the file "login.jsp" should never be cached, and will not be available offline

```
1 NETWORK:  
2  
3 #User 가 온라인 상태가 되었을 때 필요한 리소스들  
4  
5 login.jsp  
6
```

```
1 #사이트의 모든 리소스는 온라인을 필요로 함.  
2 NETWORK:  
3  
4 *
```

manifest File (Cont.)

■ Fallback

- Below specifies that "offline.html" will be served in place of all files in the /html/ catalog, in case an internet connection cannot be established.

```
1 #offline.html 파일을 /html/ 의 파일에 접근할 수 없을 때 보여짐  
2  
3 Fallback:  
4  
5 /html/ /offline.html
```

manifest File (Cont.)

■ Complete Cache Manifest File

```
1 CACHE MANIFEST
2 # 2013-10-10 v1.0.0
3 /theme.css
4 /logo.gif
5 /main.js
6
7 NETWORK:
8 login.jsp
9
10 Fallback:
11 /html/ /offline.html
12
```

manifest File (Cont.)

- To tell the browser to look for a manifest is simple.
- You add the manifest attribute to the `<html>` element, and point it to the file containing your application's manifest.

```
<!DOCTYPE html>
```

```
<html manifest="/time.manifest">
```

or

```
<html manifest="demo.appcache">
```

manifest File (Cont.)

- The recommended file extension for manifest files is: **.appcache**.
- A manifest file needs to be served with the ***correct* MIME-type**, which is **text/cache-manifest**.
- ***Must*** be configured on the web server.

manifest File (Cont.)

■ In Apache Web Server

- %Installation Folder%\conf\mime.type

```
898 multipart/signed
899 multipart/voice-message
900
901 text/cache-manifest manifest
902 text/cache-manifest appcache
903
904 text/calendar           ics ifb
905 text/css                 css
```

- Insert code, then save, then should apache web server restart.

Viewing the offline cache in Firefox

The screenshot shows the Firefox Network Cache Storage Service interface. The URL in the address bar is `about:cache?storage=appcache&context=`. The page title is "Information about the Network Cache Storage Service". There are checkboxes for "Private", "Anonymous", "AppID", and "In Browser Element", along with "Update" and "Back to overview" buttons.

appcache

Key	Data size	Fetch count	Last Modified	Expires	Pinning
http://localhost:8080/demo.html.appcache	80 bytes	1	2018-03-28 22:27:55	Expired Immediately	
http://localhost:8080/images/check.png	8831 bytes	1	2018-03-28 22:27:56	Expired Immediately	
http://localhost:8080/applicationcachedemo.html	704 bytes	1	2018-03-28 22:27:56	Expired Immediately	
http://localhost/demo.html.appcache	79 bytes	1	2018-03-29 00:15:26	No expiration time	
http://localhost/js/demo_time.js	115 bytes	1	2018-03-29 00:15:26	No expiration time	
http://localhost/images/check.png	8831 bytes	1	2018-03-29 00:15:26	No expiration time	

Lab1 : Offline Cache

■ Web Browsers

- IE11, Firefox, Google Chrome, Opera, Safari

■ Text Editors

- Notepad++, Editplus, Visual Studio Code

■ Files

- applicationcachedemo.html
- js/demo_time.js
- images/check.png
- demo_html.appcache

Lab1 : applicationcachedemo.html

```
1 <!DOCTYPE html>
2 <html lang="en" manifest="demo_html.appcache">
3 <head>
4   <meta charset="UTF-8">
5   <meta name="viewport" content="width=device-width, initial-scale=1.0">
6   <script src='js/demo_time.js'></script>
7   <title>HTML5 Application Cache Demo</title>
8 </head>
9 <body>
10 <div>Date and Time : <span id='datetimewhere'></span></div>
11 <p><button onclick='getDateTime()'>Get Date and Time</button></p>
12 <p><img src='images/check.png'></p>
13 <p>Try opening <a href='applicationcachedemo2.html' target='_blank'>This page</a>,
then go offline, and reload the page. The script and the image should still
work.</p>
14 </body>
15 </html>
```

Lab1 : demo_time.js

```
1 function getDateTime(){
2     var now = new Date();
3     document.getElementById('datetimehere').innerHTML = now;
4 }
```

Lab1 : demo_html.appcache

- 1 CACHE MANIFEST
- 2
- 3 applicationcachedemo.html
- 4 js/demo_time.js
- 5 images/check.png

Lab1 : Result

File Edit View History Bookmarks Tools Help

HTML5 Application Cache Demo × +

localhost/applicationcachedemo2.html

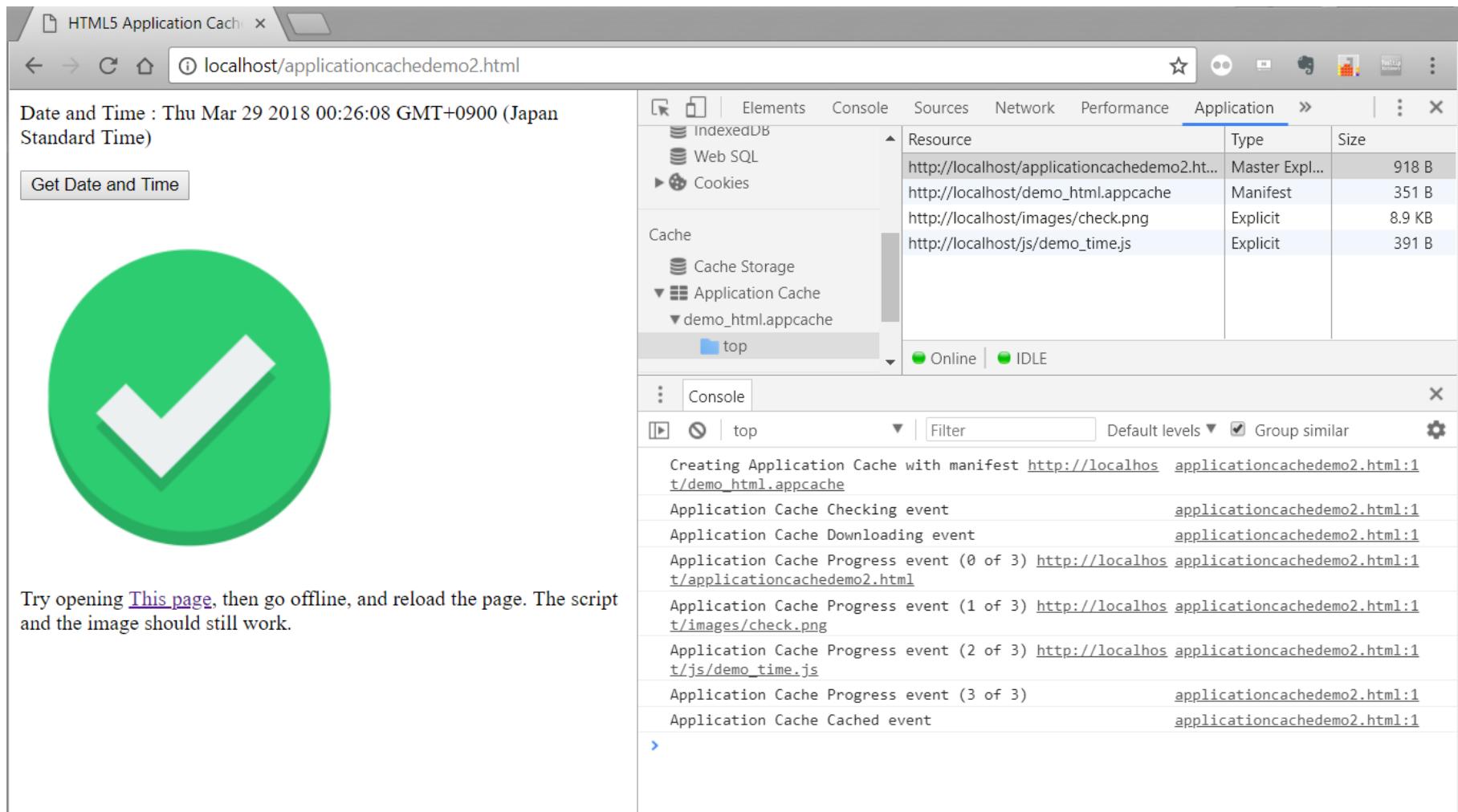
Date and Time : Thu Mar 29 2018 00:15:28 GMT+0900 (Korea Standard Time)

Get Date and Time



Try opening [This page](#), then go offline, and reload the page. The script and the image should still work.

Lab1 : Result



Date and Time : Thu Mar 29 2018 00:26:08 GMT+0900 (Japan Standard Time)

Get Date and Time

A large green circle with a white checkmark.

Resource	Type	Size
http://localhost/applicationcachedemo2.html	Master Expl...	918 B
http://localhost/demo_html.appcache	Manifest	351 B
http://localhost/images/check.png	Explicit	8.9 KB
http://localhost/js/demo_time.js	Explicit	391 B

Creating Application Cache with manifest http://localhost/applicationcachedemo2.html:1 t/demo_html.appcache
Application Cache Checking event applicationcachedemo2.html:1
Application Cache Downloading event applicationcachedemo2.html:1
Application Cache Progress event (0 of 3) http://localhost/applicationcachedemo2.html:1 t/applicationcachedemo2.html
Application Cache Progress event (1 of 3) http://localhost/applicationcachedemo2.html:1 t/images/check.png
Application Cache Progress event (2 of 3) http://localhost/applicationcachedemo2.html:1 t/js/demo_time.js
Application Cache Progress event (3 of 3) applicationcachedemo2.html:1
Application Cache Cached event applicationcachedemo2.html:1

Lab2 : Offline Cache

■ Web Browsers

- IE11, Firefox, Google Chrome, Opera, Safari

■ Text Editors

- Notepad++, Editplus, Visual Studio Code

■ Files

- applicationcachedemo1.html
- js/offline.js
- js/tracker.js
- js/log.js
- css/style.css
- tracker.appcache

Lab2 : applicationcachedemo1.html

```
2 <html lang="en" manifest="tracker.appcache">
3 <head>
4   <meta charset="UTF-8">
5   <meta name="viewport" content="width=device-width, initial-scale=1.0">
6   <script src='js/log.js'></script>
7   <script src='js/offline.js'></script>
8   <script src="js/tracker.js"></script>
9   <link rel="stylesheet" href='css/style.css' type='text/css'>
10  <title>HTML5 Application Cache Demo</title>
11 </head>
12 <body>
13   <header>
14     <h1>Offline Example</h1>
15   </header>
16
17   <section>
18     <article>
19       <button id="installButton">Check for Updates</button>
20       <h3>Log</h3>
21       <div id="info">
22         </div>
23     </article>
```

Lab2 : tracker.appcache

```
1 CACHE MANIFEST
2 #JavaScript
3 js/offline.js
4 #js/tracker.js
5 js/log.js
6
7 #stylesheets
8 css/style.css
9
10 #images
11
```

Lab2 : Result

