

브라우저 이야기

Opera Software, 신현석
제 4회 웹표준의 날

Web Browser

More Browsers

- Amaya, AOL Explorer, Arora, Avant, Dillo, DocZilla, ELinks, Epiphany, Galeon, Internet Explorer for Mac, K-Meleon, Links, Lunascape, Lynx, Maxthon, Midori, Mosaic, Mozilla, Netscape, Netscape Browser, Netscape Navigator, NetSurf, Shiira, Sleipnir, w3m

Browser []	Creator []	Cost (USD) []	Open source []	Software license []	Current layout engine []
Amaya	W3C, IBM	Free	Yes	W3C	Amaya
AOL Explorer	America Online, Inc.	Free	No	Proprietary	Trident
Arora	Benjamin C. Meyer	Free	Yes	GPL	WebKit
Avant	Avant Force	Free	No	Proprietary	Trident
Camino	The Camino Project	Free	Yes	MPL, MPL/GPL, LGPL, In-house	Gecko
Chromium	Google	Free	Yes	BSD	WebKit
Dillo	Jorge Arellano-Ceb, Sebastian Ritz, et al.	Free	Yes	GPL	Dillo
DocZilla	DFSG	Free for non-commercial use	Partial	Proprietary (browser), MPL/GPL/LGPL, In-house	Gecko
ELinks	Bodo, Francois, et al.	Free	Yes	GPL	Sub-IE based on Lynx
Epiphany	GNOME	Free	Yes	GPL	Gecko (Shipped), WebKit
Firefox	Patrick J. Walsh	Free	Yes	GPL, LGPL, MPL, In-house, Mozilla Public License	Gecko
Galeon	Marcos Poizat Gallo	Free	Yes	GPL	Gecko
Google Chrome	Google	Free	Yes	Google Chrome Terms of Service (Google Chrome executable), BSD (source code and Chromium executable)	WebKit
GNU IceCat	FSF	Free	Yes	GPL, MPL, LGPL, In-house	Gecko
IceWeasel	Alexander Chous	Free, \$20 (Pro)	Partial	Proprietary (browser), GNU GPL, In-house	WebKit (Version 4.0), Gecko (Version 1.8)
Internet Explorer	Microsoft, Spyglass	Requires a valid Windows license	No	Proprietary	Trident
Internet Explorer for Mac (Terminated)	Microsoft	Free	No	Proprietary	Trident
K-Meleon	Dorian WAG, et al.	Free	Yes	GPL	Gecko
KompoZer	ICE	Free	Yes	GPL	KHTML
Links	Patrick, et al.	Free	Yes	GPL	Sub-IE
Lunascape	Lunascape Corporation	Free	Partial	Proprietary (browser), 1	Trident Engine (Trident, Gecko, WebKit)
Lynx	Markus, Gidon, Peter, et al.	Free	Yes	GPL	Sub-IE
Maxthon	Maxthon International Limited	Free	No	Proprietary	Trident
Midori	Christian Dywan, et al.	Free	Yes	LGPL	WebKit
Mosaic	Mark Anderson and Eric Steig, NCSA	Free for non-commercial use	No	Proprietary	Sub-IE
Mozilla	Mozilla Foundation	Free	Yes	MPL, MPL/GPL/LGPL, In-house	Gecko
Mozilla Firefox	Mozilla Foundation	Free	Yes	MPL, MPL/GPL/LGPL, In-house	Gecko
Netscape (2005)	Netscape Communications Corporation, AOL	Free	Partial	Proprietary (browser), MPL, LGPL, In-house	Gecko
Netscape Browser (2000-5)	Netscape Communications for AOL	Free	Partial	Proprietary (browser & Trident), MPL, LGPL, In-house	Gecko, Trident
Netscape Communicator (2000-5)	Netscape Communications	Free	No	Proprietary	WebKit
Netscape Navigator (2000-5)	Netscape Communications	Free	No	Proprietary	WebKit
Netscape Navigator (2000-5)	Netscape Communications (Subset of AOL)	Free	Partial	Proprietary (browser), MPL, LGPL, In-house	Gecko
NetSurf	The NetSurf Developers	Free	Yes	GPL	NetSurf Sub-IE
OperaWeb	The Opera Group	Free	Partial	Proprietary (browser), GNU GPL, In-house	WebKit (Version 4.0), Omnitab (Version 1.4)
Opera	Opera Software	Free	No	Proprietary	WebKit
Opera Mobile	Opera Software	Free	No	Proprietary	WebKit
Origin Web Browser	Sand Hill	Free	Yes	BSD License	WebKit
Safari	Apple Inc.	Free	Partial	Proprietary (browser), GNU GPL, In-house	WebKit
Sleipnir	Sleipnir Council	Free	Yes	MPL, MPL/GPL/LGPL, In-house	Gecko
Shiira	Happy Macintosh Development Team	Free	Yes	BSD	WebKit
Shogun	Fantix Inc.	Free	Partial	Proprietary (browser & Trident), MPL, LGPL, In-house	Gecko, Trident
WorldWideWeb (later renamed Nexus)	Tim Berners-Lee	Free	Yes	Public domain	nextSTEP Sub-IE
w3m	Asterix	Free	Yes	MIT License	P
Browser	Creator	Cost (USD)	Open source	Software license	Current layout engine

Web Browser

CSS 2.1 Support

- Amaya, AOL Explorer, Arora, Avant, Dillo, DocZilla, ELinks, Epiphany, Galeon, Internet Explorer for Mac, K-Meleon, [Links](#), Lunascape, [Lynx](#), Maxthon, Midori, [Mosaic](#), Mozilla, [Mozilla Firefox](#), [Netscape](#), [Netscape Browser](#), [Netscape Navigator](#), [Netscape Navigator 9](#), [NetSurf](#), [OmniWeb](#), [Opera](#), [Safari](#), [SeaMonkey](#), [Shiira](#), [Sleipnir](#), [WorldWideWeb](#), [w3m](#)

Browser	CSS2.1	Frames	New LINKs	XSLT	XHTML 1.0	XHTML 1.1	MathML	XForms	Web Forms 2.0	VoiceXML/X+V	SMIL	VML	CSS Presentation/projection mode
Amaya	Yes	No	?	No	Yes	Yes	Yes	No	No	No	?	No	?
AOL Explorer	Partial	Yes	No	Yes	No	No	No	No	No	No	Yes	Yes	?
Avant	Partial	Yes	?	Yes	No	No	No	No	No	No	Yes	Yes	?
Arora	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	No	No	?	No	?
Camino	Yes	Yes	No	Yes	Yes	Yes	Yes	No	No	No	No	No	?
Dillo	Partial	Partial	No	No	No	No	No	No	No	No	?	No	?
DocZilla	Partial	Yes	Yes	Yes	Yes	Yes	Yes	?	No	No	No	No	?
ELinks	Partial	Yes	?	No	No	No	No	No	No	No	?	No	?
Epiphany	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	No	No	?	No	?
Flock	Yes	Yes	?	Yes	Yes	Yes	Yes	Yes	No	No	No	No	No
Galeon	Yes	Yes	?	Yes	Yes	Yes	Yes	No	No	No	?	No	?
Google Chrome	Yes	Yes	No	Yes	Yes	Yes	No	No	No	No	No	No	?
iCab	Yes	Yes	Yes	No	No	No	No	No	No	No	?	No	?
Internet Explorer	Partial	Yes	No	Yes	No	No	No	No	No	No	Yes	Yes	?
Internet Explorer for Mac	Partial	Yes	?	Partial	No	Yes	No	No	No	No	?	?	?
K-Meleon	Yes	Yes	?	Yes	Yes	Yes	No	No	No	No	No	No	?
Konqueror	Yes	Yes	Yes	No	Yes	Yes	No	No	No	No	?	No	?
Links	No	Yes	Yes	No	No	No	No	No	No	No	?	No	?
Lynx	No	Partial	Yes	No	No	No	No	No	No	No	No	No	?
Maxthon	Partial	Yes	?	Yes	No	No	No	No	No	No	Yes	Yes	?
Midori	Yes	Yes	No	Yes	Yes	Yes	No	No	No	No	?	No	No
Misaki	No	No	?	No	No	No	No	No	No	No	No	No	No
Mozilla	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No	No	?
Mozilla Firefox	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	No	No	No	No	No
Netscape	Yes	Yes	?	Yes	Yes	Yes	Yes	No	No	No	No	No	?
Netscape Browser	Depends	Yes	?	Yes	Depends	Depends	Depends	No	No	No	No	No	?
Netscape Navigator	No	Yes	No	No	No	No	No	No	No	No	No	No	?
Netscape Navigator 9	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	No	No	No	No	?
NetSurf	Yes	Yes	No	No	No	No	No	No	No	No	?	No	?
OmniWeb	Yes	Yes	?	No	Yes	Yes	No	No	No	No	?	No	?
Opera	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	No	No	Yes
Safari	Yes	Yes	No	Yes	Yes	Yes	No	No	No	No	No	No	No
SeaMonkey	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	No	No	No	?
Shiira	Yes	Yes	?	Yes	Yes	Yes	No	No	No	No	?	No	?
Sleipnir	Partial	Yes	No	Yes	No	No	No	No	No	No	Yes	Yes	?
WorldWideWeb	No	No	?	No	No	No	No	No	No	No	No	No	?
w3m	?	Yes	?	No	Yes	?	No	?	No	No	?	No	?

Web Browser

JavaScript Support

- Amaya, AOL Explorer, Arora, Avant, Dillo, DocZilla, ELinks, Epiphany, Galeon, Internet Explorer for Mac, K-Meleon, Links, Lunascape, Lynx, Maxthon, Midori, Mosaic, Mozilla, Netscape, Netscape Browser, Netscape Navigator, NetSurf, Shiira, Sleipnir, w3m

Browser	JavaScript	ECMAScript 3	DOM 1	DOM 2	DOM 3	XPath	DHTML	XMLHttpRequest	Rich editing
Amaya	No ^[note 1]	No ^[note 1]	No ^[note 1]	No	No	No	No	No	No
AOL Explorer	Yes	Yes	Partial	No	No	No	Yes	Yes	Yes
Avant	Yes	Yes	Partial	No	No	No	Yes	Yes	Yes
Camino	Yes	Yes	Yes	Yes	No ^[note 2]	Yes	Yes	Yes	Yes
Dillo	No	No	No	No	No	No	No	No	No
DocZilla	Yes	No	Yes	Yes	Partial	Yes	Yes	Yes	No
ELinks	Partial	Partial	No	No	No	No	No	No	No
Epiphany	Yes	Yes	Yes	Yes	No ^[note 2]	Yes	Yes	Yes	Yes
Flock	Yes	Yes	Yes	Yes	No ^[note 2]	Yes	Yes	Yes	Yes
Galeon	Yes	Yes	Yes	Yes	No ^[note 2]	Yes	Yes	Yes	Yes
Google Chrome	Yes	Yes	Yes	Yes	Partial	Yes	Yes	Yes	Yes
iCab	Yes	Yes	Partial	Partial	No	No	Yes	Yes	No
Internet Explorer	Yes	Yes	Partial	No ^[note 3]	No	Yes	Yes	Yes	Yes
Internet Explorer for Mac	Yes	Yes	Partial	No	No	No	Yes	No	No
K-Meleon	Yes	Yes	Yes	Yes	No ^[note 2]	Yes	Yes	Yes	Yes
Konqueror	Yes	Yes	Yes	Yes	Partial	No	Yes	Yes	No
Links	Partial	No	No	No	No	No	No	No	No
Lynx	No	No	No	No	No	No	No	No	No
Maxthon	Yes	Yes	Partial	No	No	Yes	Yes	Yes	Yes
Midori	Yes	Yes	Yes	Yes	Partial ^[note 4]	Yes ^[note 4]	Yes	Yes	Yes
Mosaic	No	No	No	No	No	No	No	No	No
Mozilla	Yes	Yes	Yes	Yes	No ^[note 2]	Yes	Yes	Yes	Yes
Mozilla Firefox	Yes	Yes	Yes	Yes	Partial ^[note 2]	Yes	Yes	Yes	Yes
Netscape	Yes	Yes	Yes	Yes	No ^[note 2]	Yes	Yes	Yes	Yes
Netscape Browser	Yes	Yes	Depends ^[46]	Depends ^[46]	No ^[note 2]	Depends ^[46]	Yes	Yes	Yes
Netscape Navigator	Yes	Partial	No	No	No	No	Yes	No	No
Netscape Navigator 9	Yes	Yes	Yes	Yes	No ^[note 2]	Yes	Yes	Yes	Yes
NetSurf	No	No	No	No	No	No	No	No	No
OmniWeb	Yes	Yes	Yes	Yes	No	No	Yes	Yes	No
Opera	Yes	Yes	Yes	Yes	Partial	Yes	Yes	Yes	Yes
Safari	Yes	Yes	Yes	Yes	Partial ^[note 4]	Yes ^[note 4]	Yes	Yes	Yes
SeaMonkey	Yes	Yes	Yes	Yes	No ^[note 2]	Yes	Yes	Yes	Yes
Shiira	Yes	Yes	Yes	Yes	No	No	Yes	Yes	Yes
Sleipnir	Yes	Yes	Partial	No ^[note 3]	No	Yes	Yes	Yes	Yes
WorldWideWeb	No	No	No	No	No	No	No	No	No
w3m	No	No	No	No	No	No	No	No	No

Web Browser

Outdated? No

- Amaya, AOL Explorer, Arora, Avant, Dillo, DocZilla, ELinks, Epiphany, Galeon, Internet Explorer for Mac, K-Meleon, Links, Lunascape, Lynx, Maxthon, Midori, Mosaic, Mozilla, Netscape, Netscape Browser, Netscape Navigator, NetSurf, Shiira, Sleipnir, w3m

Browser []	Creator []	Cost (USD) []	Open source []	Software license []	Current layout engine []
Amaya	W3C, IBM	Free	Yes	W3C	Amaya
AOL Explorer	America Online, Inc	Free	No	Proprietary	Trident
Arora	Benoit C. Meyer	Free	Yes	GPL	WebKit
Avant	Avant Force	Free	No	Proprietary	Trident
Camino	The Camino Project	Free	Yes	MPL, MPL/GPL, LGPL, In-house	Gecko
Chromium	Google	Free	Yes	BSD	WebKit
Dillo	Jorge Andres Odi, Seanhan, Rob, et al	Free	Yes	GPL	Dillo
DocZilla	DFSG	Free for non-commercial use	Partial	Proprietary (browser), MPL/GPL/LGPL (plugins)	Gecko
ELinks	Bodo, Francois, et al	Free	Yes	GPL	libwww, based on Lynx
Epiphany	Gnome	Free	Yes	GPL	Gecko (Shimons), WebKit
Flock	Flock Inc	Free	Yes	GPL (some plugins), GPL/PLA/LGPL, In-house (for Firefox)	Gecko
Galeon	Marcos Poizat Gallo	Free	Yes	GPL	Gecko
Google Chrome	Google	Free	Yes TM 1	Google Chrome Terms of Service (Google Chrome executable), BSD (source code and Chromium executable)	WebKit
GNU IceCat	FSF	Free	Yes	GPL, MPL, LGPL, In-house	Gecko
IceWeasel	Alexander Clauss	Free, \$20 (Pro)	Partial	Proprietary (browser), GNU/LGPL (plugins)	WebKit (Version 4.0), Gecko (Version 1.9)
Internet Explorer	Microsoft, Spyglass	Requires a valid Windows license TM	No	Proprietary	Trident
Internet Explorer for Mac (Terminated)	Microsoft	Free	No	Proprietary	Trident
K-Meleon	Dorian WAG, et al	Free	Yes	GPL	Gecko
KompoZer	ICE	Free	Yes	GPL	KHTML
Links	Patricia, et al	Free	Yes	GPL	libwww
Lunascape	Lunascape Corporation	Free	Partial	Proprietary (browser), 1	Trident Engine (Trident, Gecko, WebKit)
Lynx	Markus, Gidon, Pascal, et al	Free	Yes	GPL	libwww
Maxthon	Maxthon International Limited	Free	No	Proprietary	Trident
Midori	Christian Eyraud, et al	Free	Yes	LGPL	WebKit
Mosaic	Mark Anderson and Eric Steig, NCSA	Free for non-commercial use	No	Proprietary	libwww
Mozilla	Mozilla Foundation	Free	Yes	MPL, MPL/GPL/LGPL, In-house	Gecko
Mozilla Firefox	Mozilla Foundation	Free	Yes	MPL, MPL/GPL/LGPL, In-house	Gecko
Netscape (2.0-3.0) TM	Netscape Communications Corporation, AOL	Free	Partial	Proprietary (browser), MPL/GPL/LGPL (plugins)	Gecko
Netscape Browser (2.0) TM 2	Netscape Communications for AOL	Free	Partial	Proprietary (browser & Trident), MPL/GPL/LGPL (plugins)	Gecko, Trident
Netscape Communicator (2.0) TM 3	Netscape Communications	Free	No	Proprietary	WebKit
Netscape Navigator (2.0-3.0) TM 4	Netscape Communications	Free	No	Proprietary	WebKit
Netscape Navigator (3.0-3.0) TM 5	Netscape Communications (Mozilla-AOL)	Free	Partial	Proprietary (browser), MPL/GPL/LGPL (plugins)	Gecko
NetSurf	The NetSurf Developers	Free	Yes	GPL	NetSurf libwww
OperaWeb	The Opera Group	Free	Partial	Proprietary (browser), GNU/LGPL (plugins)	WebKit (Version 4.0), Omnitab (Version 1-6)
Opera	Opera Software	Free	No	Proprietary	WebKit
Opera Mobile	Opera Software	Free	No	Proprietary	WebKit
Origin Web Browser	Sand Labs	Free	Yes	BSD License	WebKit
Safari	Apple Inc.	Free	Partial	Proprietary (browser), GNU/LGPL (plugins)	WebKit
SailorMonkey	SailorMonkey Council	Free	Yes	MPL, MPL/GPL/LGPL, In-house	Gecko
Shiira	Happy Macintosh Development Team	Free	Yes	BSD	WebKit
Shogun	Fantix Inc.	Free	Partial	Proprietary (browser & Trident), MPL/GPL/LGPL (plugins)	Gecko, Trident
WorldWideWeb (later renamed Nexus)	Tim Berners-Lee	Free	Yes	Public domain	nextSTEP libwww
w3m	Akashi Ino	Free	Yes	MIT License	P
Browser	Creator	Cost (USD)	Open source	Software license	Current layout engine

i~~**e**~~⁶ **no more**



Mobile

Mobile Browsers



Mobile

Mobile Web Site



5.1.1 Thematic Consistency of Resource Identified by a URI

[THEMATIC_CONSISTENCY] Ensure that content provided by accessing a URI yields a thematically coherent experience when accessed from different devices.

5.1.1.1 *What it means*

This is a realization of the One Web (see [3.1 One Web](#)) principle, whereby content should be accessible on a range of devices irrespective of differences in presentation capabilities and access mechanism. Web sites may paginate their content in various ways corresponding to differences in device characteristics; therefore the navigation structure of the site, and possibly its technical realization, may vary according to the device class that is being served. (See also [\[WebArch\] Section 3.5.1](#)).

A bookmark captured on one device should be usable on another, different type of device even if it does not yield exactly the same experience. If the page that was bookmarked is not appropriate for the device that is now using it, an alternative that is suitable should be provided.

URIs may be decorated to provide session or other information. If a URI is decorated with session information that is no longer current, then the user should be directed to a point in the navigation hierarchy that is appropriate to their device, in order to establish appropriate session and other parameters.

3.1 One Web

The recommendations in this document are intended to improve the experience of the Web on mobile devices. While the recommendations are not specifically addressed at the desktop browsing experience, it must be understood that they are made in the context of wishing to work towards "One Web".

As discussed in the Scope document [[Scope](#)], *One Web* means making, as far as is reasonable, the same information and services available to users irrespective of the device they are using. However, it does not mean that exactly the same information is available in exactly the same [representation](#) across all devices. The context of mobile use, device capability variations, bandwidth issues and mobile network capabilities all affect the representation. Furthermore, some services and information are more suitable for and targeted at particular user contexts (see [5.1.1 Thematic Consistency of Resource Identified by a URI](#)).

Some services have a primarily mobile appeal (location based services, for example). Some have a primarily mobile appeal but have a complementary desktop aspect (for instance for complex configuration tasks). Still others have a primarily desktop appeal but a complementary mobile aspect (possibly for alerting). Finally there will remain some Web applications that have a primarily desktop appeal (lengthy reference material, rich images, for example).

It is likely that application designers and service providers will wish to provide the best possible experience in the context in which their service has the most appeal. However, while services may be most appropriately experienced in one context or another, it is considered best practice to provide as reasonable experience as is possible given device limitations and not to exclude access from any particular class of device, except where this is necessary because of device limitations.

From the perspective of this document this means that services should be available as some variant of HTML over HTTP (see [3.7 Default Delivery Context](#)).

Mobile

Media queries

- ◎ Opera Software에서 처음 제안
 - @media screen and (max-device-width: 480px) {
/* mobile optimisation */
}
- ◎ Media 환경에 맞는 CSS를 선언할 수 있음
- ◎ W3C Candidate Recommendation 15 September 2009
 - <http://www.w3.org/TR/css3-mediaqueries/>
- ◎ Opera Mobile, Opera 5 Mini, Apple's iPhone 에서 지원
 - viewport META tag와 같이 사용을 고민
 - Apple 독자 규정



WE ♥ APPLE



What we don't love is
anybody taking away your freedom to
choose what you create, how you create it,
and what you experience on the web.



WE 
ADOBE

Web Browsing Performance on Android 2.2 Hampered by Flash Compatibility [Updated]

Monday May 24, 2010 02:03 PM EST
Written by Eric Slivka

PocketNow offers a comparison of Web browsing speeds between Apple's iPhone 3GS and Google's new Android 2.2 "Froyo" announced earlier this week. Froyo is notable for Google's claims regarding browsing speed, but also for its support of Adobe's Flash Player 10.1 Beta, which will allow Android devices running the updated operating system to handle Flash content on the Web, unlike the iPhone.



PocketNow's lengthy video comparison seems to show that Froyo does in fact offer a speedy browsing experience, but that speed increase is canceled out by the need for it to load Flash content on many websites. The result means that users may be able to enjoy the benefit of seeing webpages rendered with Flash content included, but at the expense of slower page loading.

Furthermore, while the demonstration appears to show adequate ability to play Flash-based games, the browser's ability to deal with Flash content on a fluid basis as integrated into a webpage seems less impressive. Flash elements lead to stuttering while scrolling and zooming on webpages with Flash content, and even resulted in a low memory warning requiring the tester to actively manage the currently open applications on the test device. Commenters on the *PocketNow* article report that users have the ability to load Flash elements only on demand, but that even so the browser experiences some increased lag compared to Flash-free browsing.

One significant consequence of the [OBJECT](#) element's design is that it offers a mechanism for specifying alternate object renderings; each embedded [OBJECT](#) declaration may specify alternate content types. If a user agent cannot render the outermost [OBJECT](#), it tries to render the contents, which may be another [OBJECT](#) element, etc.

In the following example, we embed several [OBJECT](#) declarations to illustrate how alternate renderings work. A user agent will attempt to render the first [OBJECT](#) element it can, in the following order: (1) an Earth applet written in the Python language, (2) an MPEG animation of the Earth, (3) a GIF image of the Earth, (4) alternate text.

```
<P>          <!-- First, try the Python applet -->
<OBJECT title="The Earth as seen from space"
          classid="http://www.observer.mars/TheEarth.py">
          <!-- Else, try the MPEG video -->
<OBJECT data="TheEarth.mpeg" type="application/mpeg">
          <!-- Else, try the GIF image -->
<OBJECT data="TheEarth.gif" type="image/gif">
          <!-- Else render the text -->
          The <STRONG>Earth</STRONG> as seen from space.
        </OBJECT>
      </OBJECT>
    </OBJECT>
```

The outermost declaration specifies an applet that requires no data or initial values. The second declaration specifies an MPEG animation and, since it does not define the location of an implementation to handle MPEG, relies on the user agent to handle the animation. We also set the `type` attribute so that a user agent that knows it cannot render MPEG will not bother to retrieve "TheEarth.mpeg" from the network. The third declaration specifies the location of a GIF file and furnishes alternate text in case all other mechanisms fail.



Opera 10.10



iPhone Safari



Opera Mini 5

<http://rra.go.kr/lab/greeting/index.jsp>









HTML5 WEB APPLICATIONS

	MAC				WIN											
																
	CHROME	FIREFOX	OPERA	SAFARI	CHROME	FIREFOX	OPERA	SAFARI	OPERA	OPERA	SAFARI	IE	IE	IE	IE	
	5	3.6	10.1	4	5	4	3.6	3	10	10.5	4	6	7	8	9	
Local Storage	✓	✓	✗	✓	✓	✓	✓	✗	✗	✓	✓	✗	✗	✓	✓	88%
Session Storage	✗	✓	✗	✓	✓	✗	✓	✓	✗	✓	✓	✗	✗	✓	✓	80%
Post Message	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✗	✓	✓	85%
Offline Applications	✓	✓	✗	✓	✓	✗	✓	✓	✗	✗	✓	✗	✗	✗	✗	66%
Workers	✓	✓	✗	✓	✓	✓	✓	✗	✗	✗	✓	✗	✗	✗	✗	73%
Query Selector	✓	✓	✓	✓	✓	✓	✓	✗	✓	✓	✓	✗	✗	✗	✓	83%
Web Database	✓	✗	✗	✓	✓	✓	✗	✗	✗	✓	✓	✗	✗	✗	✗	36%
GeoLocation	✗	✓	✗	✗	✓	✗	✓	✗	✗	✗	✗	✗	✗	✗	✗	51%

* Percentage score based on 21,103 real-world results recorded since April 1st 2010. [Find out more »](#)

Contribute your result »

HTML5 EMBEDDED CONTENT

	MAC				WIN											
																
	CHROME	FIREFOX	OPERA	SAFARI	CHROME	FIREFOX	OPERA	SAFARI	IE							
	5	3.6	10.1	4	5	4	3.6	3	10	10.5	4	6	7	8	9	
Canvas	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✗	✗	✗	✓	82%
Canvas Text	✓	✓	✗	✓	✓	✓	✓	✗	✗	✓	✓	✗	✗	✗	✓	79%
Audio	✓	✓	✗	✓	✓	✓	✓	✗	✗	✓	✓	✗	✗	✗	✓	78%
Video	✓	✓	✗	✓	✓	✓	✓	✗	✗	✓	✓	✗	✗	✗	✓	78%

* Percentage score based on 21,103 real-world results recorded since April 1st 2010. [Find out more »](#)

Contribute your result »



HTML5

A vocabulary and associated APIs for HTML and XHTML

[← 4.6 Text-level semantics](#) – [Table of contents](#) – [4.8.10 The canvas element](#) →

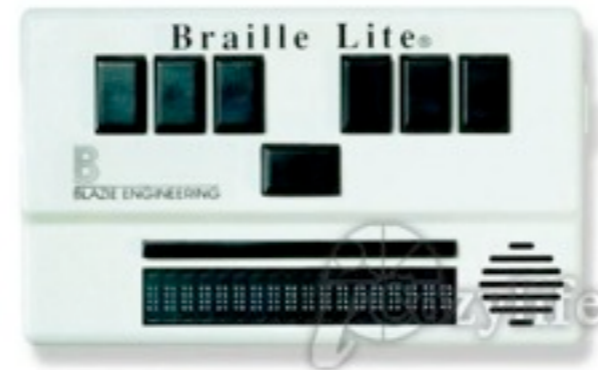
4.8.6 The **video** element

(Omit)

Content may be provided inside the **video** element. User agents should not show this content to the user; it is intended for older Web browsers which do not support **video**, so that legacy video plugins can be tried, or to show text to the users of these older browsers informing them of how to access the video contents.

Accessibility

Assistive Technology





Search

Browse

Upload

Virginia's new iPad

sackr

1 videos

Subscribe

To this technical-ninny it's clear
In my compromised 100th year,
That to read and to write
Are again within sight
Of this Apple iPad pioneer.

1:37 / 1:52

360p

⏸ 🔊 🔍 ↺ ⏪ ⏩ ⏹

Separation

구조와 표현, 동작의 분리

Progressive Enhancement

점진적 향상

Graceful Degradation

우아한 저하

감사합니다

<http://hyeonseok.com/>, hyeonseok@gmail.com