= Acid2 =

Acid2 is a test page published and promoted by the Web Standards Project to expose web page rendering flaws in web browsers and other applications that render HTML . Named after the acid test for gold , it was developed in the spirit of Acid1 , a relatively narrow test of compliance with the Cascading Style Sheets 1 @.@ 0 (CSS1) standard , and was released on 13 April 2005 . As with Acid1 , an application passes the test if the way it displays the test page matches a reference image .

Acid2 tests aspects of HTML markup , CSS 2 @.@ 1 styling , PNG images , and data URIs . The Acid2 test page will be displayed correctly in any application that follows the World Wide Web Consortium and Internet Engineering Task Force specifications for these technologies . These specifications are known as web standards because they describe how technologies used on the web are expected to function .

Acid2 was designed with Microsoft Internet Explorer particularly in mind . The creators of Acid2 were dismayed that Internet Explorer did not follow web standards . It was prone to display web pages differently from other browsers , causing web developers to spend time tweaking their web pages . Acid2 challenged Microsoft to make Internet Explorer comply with web standards .

Acid2 was released on 13 April 2005 . On 31 October 2005 , Safari 2 @.@ 0 @.@ 2 became the first browser to pass Acid2 . Opera , Konqueror , Firefox , and others followed . With the release of Internet Explorer 8 on 19 March 2009 , the latest versions of all major desktop web browsers now pass the test , until IE10 was released , which fails the test , and its successor , Microsoft Edge , has never been able to render it (as of writing) . Acid2 was followed by Acid3 .

The test fails when browsers become compliant with current CSS collapse and margin standards .

= = History = =

Acid2 was first proposed by Håkon Wium Lie , chief technical officer of Opera Software and creator of the widely used Cascading Style Sheets web standard . In a 16 March 2005 article on CNET , Lie expressed dismay that Microsoft Internet Explorer did not properly support web standards and hence was not completely interoperable with other browsers . He announced that Acid2 would be a challenge to Microsoft to design Internet Explorer 7 , then in development , to achieve a greater degree of standards compliance than previous versions of Internet Explorer . The original Acid1 test had forced browser makers to fix their applications or face embarrassment ; Lie hoped that Acid2 would do the same .

Lie and a colleague , Ian Hickson , had created the first draft of the test in February 2005 . Ian Hickson coded the final test in collaboration with the Web Standards Project and the larger web community . It was officially released on 13 April 2005 and at that time , every web browser failed it spectacularly .

On 23 April 2005 , Acid2 was updated to fix a bug that made the mouth appear too close to the nose . After several complaints , the test was again updated in January 2006 to remove a test for unpopular SGML @-@ style comments that were never widely implemented . In browsers that do not implement SGML @-@ style comments , the original test displayed the word " ERROR " on the bottom part of the face .

In March 2008 , Ian Hickson released Acid3 as a follow @-@ up to Acid2 . While Acid2 primarily tests CSS , Acid3 focuses more on JavaScript and other " Web 2 @.@ 0 " technologies .

= = Microsoft 's response = =

In July 2005 , Chris Wilson , the Internet Explorer Platform Architect , stated that passing Acid2 was not a priority for Internet Explorer 7 , describing the test as a " wish list " of features rather than a true test of standards compliance . In December 2007 , Microsoft announced that all the changes required to pass Acid2 would be made available in Internet Explorer 8 , but that the changes would not be turned on by default , meaning that IE8 would not actually pass the test . The concern was

that switching to a new behavior would cause too many problems in web pages expecting Internet Explorer 's old , non @-@ compliant behavior . Then in March 2008 Microsoft released IE8 beta 1 and turned on the changes by default after all . James Pratt , product manager for IE8 , explained that this decision was made so that " developers can spend more time building features and cool stuff , and less time just trying to tweak their sites across different browsers . "

Unfortunately , another unresolved standards compliance issue caused IE8 beta 1 to fail if not all elements of the test were hosted from the same server . In August 2008 Microsoft released IE8 beta 2 , which resolved the issue . As of that beta , however , standards mode is not turned on by default for pages loaded in the " Intranet Zone " . This zone is active for pages loaded via UNC paths , named addresses without dots (like http : / / mysite /) , and sites that bypass the proxy settings . As such , IE8 will not pass the Acid2 test if loaded in these cases .

= = Overview of standards tested = =

Acid2 tests a variety of web standards published by the World Wide Web Consortium and the Internet Engineering Task Force . With the exception of CSS 2 @.@ 1 , all web standards tested were codified before the year 2000 . CSS 2 @.@ 1 was a candidate recommendation at the time of Acid2 's release , and was still a candidate recommendation as of 23 April 2009 .
Specifically , Acid2 tests :
Alpha transparency in PNG @-@ format images : The eyes of the smiley face use alpha transparency , which is part of the 1996 Portable Network Graphics specification . Alpha transparency blends the eyebrows into the face smoothly and elegantly . This was a significant issue because Internet Explorer 6 , the most widely used web browser at the time Acid2 was released , did not support alpha transparency . This deficiency was rectified in Internet Explorer 7 , bringing Internet Explorer in line with other web browsers in this regard .
The object element : The eyes also test support of the HTML object element . The object element has been a part of HTML since HTML 4 was released in 1998 , yet by 2005 it still was not completely supported in all web browsers . The creators of Acid2 considered object element support important because it allows for content fallback ? if an object fails to load , then the browser can display alternative (generally simpler , more reliable) content in its place .
Data URIs : The actual images that form the eyes are encoded as data URIs , which allow multimedia to be embedded in web pages rather than stored as a separate file . Acid2 tests the most common case , where a binary image is base64 @-@ encoded into text and then that encoded text is included in a data URI in the web page . Although the IETF published the data URI specification in 1998 , they never formally adopted it as a standard . Nonetheless , the HTML 4 @.@ 01 specification references the data URI scheme , and data URI support has now been implemented in most browsers .
Absolute , relative , and fixed CSS positioning : Absolute positioning means that the web developer specifies the exact X and Y coordinates where an element is to be placed into the page . Relative positioning means that the web developer specifies an X and Y offset from the usual position of the element . Fixed positioning means that the element is placed relative to the browser window , and scrolls with the window rather than with the rest of the page .
The CSS box model : This feature allows the web designer to specify dimensions , padding , borders , and margins , and was the focus of the original Acid1 test . Acid2 not only retests margin support but also tests minimum and maximum heights and widths , features new to CSS 2 @.@ 0 .
CSS table formatting : This part of CSS allows the web designer to apply table formatting without traditional HTML table markup .
CSS generated content : Using CSS generated content , web developers can add decorations and annotations to specified elements without having to add the content to each one individually .
CSS parsing : A number of illegal CSS statements are present in Acid2 to test error handling . Standards @-@ compliant browsers are expected to handle these errors as the CSS specification directs . This helps ensure cross @-@ browser compatibility by making all browsers treat CSS with the same level of strictness , so that what works in one browser should not cause errors in another .

Paint order : Acid2 requires that the browser has standard paint order . That is , overlapping elements should be placed or painted on top of each other in the correct order .

Hovering effects : When the user moves his or her mouse over the smiley face 's nose , it turns blue . This is called a hovering effect , and while it has traditionally been used for hyperlinks , it should work on a wide variety of HTML elements .

Because Acid2 is not a comprehensive test , it does not guarantee total conformance to any particular standard . A variant of the Acid2 test that does not test for data URI support is also available from the Web Standards Project .

= = Passing conditions = =

A passing score is only considered valid if the browser 's default settings were used . Actions such as changing font sizes , zoom level , and applying user stylesheets can break the display of the test . This is expected and is not relevant to a browser 's compliance .

The following browser settings and user actions invalidate the test :

Scrolling

Resizing the browser window

Zooming in or out

Disabling images

Using Opera 's Fit to width or Small Screen Rendering modes

Applying custom fonts , colors , styles , etc .

User JavaScript or Greasemonkey scripts

Enabling Internet Explorer 's " compatibility view "

= = Compliant applications = =

If rendered correctly , Acid2 will appear as a smiley face below the text " Hello World ! " in the user 's browser , with the nose turning blue when the mouse cursor hovers over it . At the time of the test 's release , every browser failed it , but now a number of browsers pass it . See the list below .

= = = Officially released = = =

Internet Explorer , the web browser that comes with Windows

Odyssey Web Browser , a web browser for AmigaOS and MorphOS

Gecko @-@ based browsers

Mozilla Firefox , a web browser for Windows , Mac OS X , and Linux

SeaMonkey , an Internet suite for Windows , Mac OS X , and Linux

Songbird , a media player and web browser for Windows , Mac OS X , and Linux

Camino , a web browser for Mac OS X

Mozilla Thunderbird , an email client for Windows , Mac OS X , and Linux

Firefox for mobile , a web browser for mobile devices

Miro , an RSS aggregator , BitTorrent client , web browser and media player

Mozilla Sunbird , a calendar application for Windows , Mac OS X , and Linux

Spicebird 0 @.@ 8 , a personal information manager for Windows , Mac OS X , and Linux

WebRunner (formerly Prism) , a web application platform for Windows , Mac OS X , and Linux

WebKit- and KHTML @-@ based browsers

Safari , the web browser included in Mac OS X

Google Chrome , a web browser for Windows , Mac OS X , and Linux

Konqueror , a web browser for Linux

OmniWeb , a web browser for Mac OS X

Shiira , a web browser for Mac OS X

iCab , a web browser for Mac OS X

Web , the official GNOME web browser

Midori , the official Xfce web browser

The Google Earth integrated web browser

Presto @-@ based browsers

Opera , a web browser for Windows , Mac OS X , Linux , BSD and Solaris with mobile versions for all mobile phones , tablets and all Apple products like iPad

The Internet Channel , a version of the Opera browser for the Nintendo Wii game console .

Prince , an XML @-@ to @-@ PDF converter for Windows , Mac OS X , and Linux

= = Non @-@ compliant applications = =

Even though Opera Mini is based on the same rendering engine as Opera for personal computers , it does not pass the Acid2 test . This is because Opera Mini intentionally reformats web pages to try to make them more suitable for devices with small screens .

= = Timeline of passing applications = =

The following is a list of releases noting significant releases of applications that passed the test . New applications that have passed Acid2 since their first official release are not included in the timeline .