



Rational software

Section 508 of the U.S. Rehabilitation Act: its impact on federal agencies and what you can do to gain compliance.

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Web accessibility management: Section 508

According to the U.S. Census, there are 51 million Americans with some form of disability. This group makes up approximately 30 percent of the online population. Because access to government information continues to be an area of concern for many U.S. citizens with disabilities, the U.S. government enacted Section 508 of the Rehabilitation Act in 2001 to ensure that government agencies create accessible Web content, enabling all citizens to access the information they need.

Unfortunately, many government organizations fail to provide fully accessible Web content. The sixth annual e-government survey released by Brown University in September 2005 showed that only 44 percent of federal and 40 percent of state Web sites met the World Wide Web Consortium (W3C) disability guidelines.

A fully accessible Web site makes Web content accessible to all individuals, including those with disabilities, who may be accessing Web content via a variety of user agents. Common user agents include standard Web browsers, text-only browsers, assistive devices and mobile devices such as cell phones or personal digital assistants (PDAs).

Highlights

The IBM Rational® Policy Tester Accessibility Edition scans Web content and provides detailed analysis on how accessible your site is to all visitors, regardless of disability.

Nongraphical browsers, screen readers and mobile phone browsers cannot describe images to users with visual impairments.

A comprehensive accessibility compliance solution

IBM provides a comprehensive Web accessibility compliance management platform with support for Section 508 standards. The IBM Rational® Policy Tester™ Accessibility Edition scans Web content and provides detailed analysis on how accessible your site is to all visitors, regardless of disability. Using the reports generated by Rational Policy Tester Accessibility Edition, users are armed with the information they need to manage the following provisions that cover the Web-based intranet and Internet information and applications provisions of Section 508:

Text equivalents for nontext elements

Provision a: A text equivalent for every nontext element shall be provided (e.g., via “alt,” “longdesc,” or in element content).

Importance: Alternative representation for nontext elements is critical to Web accessibility. Nongraphical browsers, screen readers and mobile phone browsers cannot describe images to users with visual impairments. You must therefore provide alternative text that describes each image, particularly for images used for navigation. Even if images are redundant or you might consider them unimportant, you should employ empty alternative text, so the assistive technology and nongraphical browsers know to ignore the images.

IBM Rational Policy Tester Accessibility Edition helps by:

- *Identifying nontext elements without alternative text, including images, applets, media, plug-ins, iframes and image maps.*
- *Listing Web pages that have nontext elements without alternative text.*

Highlights

Equivalent alternatives for multimedia

Provision b: Equivalent alternatives for any multimedia presentation shall be synchronized with the presentation.

Importance: Because nongraphical browsers, screen readers and mobile phone browsers cannot play multimedia files, it's important to provide an alternative method for conveying the information contained in them.

IBM Rational Policy Tester Accessibility Edition helps by reporting on the multimedia used in your Web sites.

Provide alternatives for information conveyed with color

Provision c: Web pages shall be designed so that all information conveyed with color is also available without color, for example, from context or markup.

Importance: If the Web page conveys information by color alone, users who cannot identify or distinguish colors will not be able to make use of the information. For example, asking users to "click the red button" is not useful if the user can't distinguish the red button from other buttons. Therefore, you need to provide an alternate way of conveying that information.

IBM Rational Policy Tester Accessibility Edition helps by identifying and reporting on uses of color elements on each Web page.

IBM Rational Policy Tester Accessibility Edition helps you identify and correct any Web pages that convey information by color alone, which makes them difficult for users who cannot distinguish colors.

Highlights

Because not all browsers and assistive technologies support CSSs, Web pages must be readable without the use of style sheets.

After you identify pages with client-side image maps using IBM Rational Policy Tester Accessibility Edition software, you can make them accessible by supplying alternative text for each area of the map.

Remove dependencies on style sheets

Provision d: Documents shall be organized so they are readable without requiring an associated style sheet.

Importance: Cascading style sheets (CSSs) describe how elements on a Web page are presented. However, not all style sheet presentation features can be rendered properly with older Web browsers. Because not all browsers and assistive technologies support CSSs, Web pages must be readable without the use of style sheets.

IBM Rational Policy Tester Accessibility Edition helps by reporting each page's dependency on style sheets.

Provide redundant links

Provision e: Redundant text links shall be provided for each active region of a server-side image map.

Importance: Client-side image maps can be made accessible by supplying alternative text for each area of the map. You must provide alternative text for the image map itself, as well.

IBM Rational Policy Tester Accessibility Edition helps by identifying pages with server-side image maps.

Highlights

Best practices dictate that you should use client-side image maps instead of server-side image maps, whenever possible.

Using markup to associate data cells and header cells for data tables can help people with visual impairments access data in the table more quickly and easily.

Leverage client-side image maps

Provision f: Client-side image maps shall be provided instead of server-side image maps, except where the regions cannot be defined with an available geometric shape.

Importance: Server-side image maps are currently not accessible to anyone using nongraphical browsers or browsers with the images functionality turned off. Best practices therefore dictate that you use client-side image maps whenever possible.

IBM Rational Policy Tester Accessibility Edition helps by reporting on pages with server-side image maps that do not also provide client-side image maps.

Identify row and column headers and use markup to associate data cells and header cells
Provisions g and h: Row and column headers shall be identified for data tables. Markup shall be used to associate data cells and header cells for data tables that have two or more logical levels of row or column headers.

Importance: If you can see, you have the ability to scan up a column and across a row to find the information. If you cannot see a table, but are listening to it described by a speech synthesizer, it can be a daunting task to try to find this simple information. The headers attribute provides one solution to this problem.

IBM Rational Policy Tester Accessibility Edition helps by:

- *Identifying tables that do not use headers.*
- *Reporting on tables that do not use extended markup.*

Highlights

Giving frames meaningful titles can help users to easily identify the frame they want to open.

Title frames to facilitate identification and navigation

Provision i: Frames shall be titled with text that facilitates frame identification and navigation.

Importance: When users access a frame page with a text-only browser or assistive technologies, they must select from a list which frame to open. Given this, frames must have meaningful titles so these users can easily identify the frame they want to open.

IBM Rational Policy Tester Accessibility Edition helps by:

- *Identifying frame use.*
- *Developing a list of frames without titles.*
- *Reporting on pages without titles.*

Keep screen flicker between 2 hertz and 55 hertz

Provision j: Pages shall be designed to avoid causing the screen to flicker with a frequency greater than 2 Hz and lower than 55 Hz.

Displays that flicker or flash can cause photosensitive epileptic seizures in susceptible individuals.

Importance: Displays that flicker or flash – including flashing text, graphics that turn on and off, or pages that repeatedly change the image appearing on the screen – can cause photosensitive epileptic seizures in susceptible individuals. Currently, user agents do not allow users to control flickering or blinking, so you should avoid causing the screen to flicker or blink when you design your Web pages.

IBM Rational Policy Tester Accessibility Edition helps by identifying technologies that typically cause flickering, such as programmatic objects and animated graphic interchange format (gif) images.

Highlights

If you can't achieve accessibility compliance any other way, a text-only page that provides the same content and functionality as the original page should be provided.

IBM Rational Policy Tester Accessibility Edition helps you identify the scripts on your site, which can be made accessible by providing corresponding functional text that can be read by assistive technology.

Provide a text-only page

Provision k: A text-only page, with equivalent information or functionality, shall be provided to make a Web site comply with the provisions of this part, when compliance cannot be accomplished in any other way. The content of the text-only page shall be updated whenever the primary page changes.

Importance: If you find that you cannot achieve compliance any other way, a text-only page with equivalent information and functionality should be provided to make the Web site accessible. However, this is not the ideal solution. The text-only pages must be maintained and updated in congruence with the primary Web pages, which can escalate costs. In addition, you can potentially alienate users with disabilities.

IBM Rational Policy Tester Accessibility Edition helps by identifying the presence of text-only links.

Identify information in a script with functional text

Provision l: When pages use scripting languages to display content, or to create interface elements, the information provided by the script shall be identified with functional text that can be read by assistive technology.

Importance: Some of the functionality provided by scripts can be considered non-essential to the operation of your application and can actually help usability—or at least, not negatively affect accessibility. For example, Java™ Script mouseovers used for visual effects, such as highlighting or changing background color, are not an issue for accessibility for the blind and might actually improve usability for the learning impaired.

IBM Rational Policy Tester Accessibility Edition helps by reporting on the presence of scripts.

Highlights

When a Web site uses applets or other applications to successfully complete tasks or interpret content, both the informational content and the user interface should be accessible to assistive technologies.

When using applications to interpret content, provide a link to a compliant application

Provision m: When a Web page requires that an applet, plug-in or other application be present on the client system to interpret page content, the page must provide a link to a plug-in or applet that complies with Section 1194.21(a) through (l).

Importance: Applet and plug-in technologies were developed to deliver non-HTML-coded content to enhance visual, audio and interactive effects, and to deliver other applications in the browser environment. When a Web site or Web application needs to execute these technologies to successfully complete tasks or interpret content, it is important that both the informational content and the user interface be accessible to assistive technologies. In some cases, the user interface and the informational content can be part of the same applet, plug-in or application.

IBM Rational Policy Tester Accessibility Edition helps by reporting on the presence of applets or plug-ins, helping to ensure that they have proper links to the sources of the objects.

Enable people using assistive technology to access information in forms

Provision n: When electronic forms are designed to be completed online, the form shall allow people using assistive technology to access the information, field elements and functionality required for completion and submission of the form, including all directions and cues.

Highlights

Because forms can be problematic for individuals using assistive devices, to specify a logical tab order among form controls and label form elements.

IBM Rational Policy Tester Accessibility Edition software can help you identify pages that contain more than 15 links, which can be made more accessible by enabling users to quickly bypass groups of links, and get to the main portion of the page.

Importance: Forms are often one of the most problematic issues for individuals using assistive devices. To make forms accessible, it's important to specify a logical tab order among form controls and to label each form element. Labels must be explicitly associated with the form elements. Also, make sure to provide alternative text for all image-type buttons in forms.

IBM Rational Policy Tester Accessibility Edition helps by:

- *Identifying whether forms are assistive-technology friendly.*
- *Reporting on the presence of explicit labels for form controls.*

Enable users to skip repetitive navigation links

Provision o: A method shall be provided that permits users to skip repetitive navigation links.

Importance: When a navigation bar appears at the top or on the left side of the page, users who are reading the page with speech synthesis technology must listen to all links across the top and down the left side before getting to the main content. If each page on the site has been developed using a consistent layout, this occurs for each page the user visits on the site. The goal is to enable users to quickly bypass all the groups of links, such as navigation bars and tables of contents, to get to the main starting portions of the page.

IBM Rational Policy Tester Accessibility Edition helps by identifying pages that contain more than 15 links.

Highlights

When a Web page requires a timed response, alert users and give them sufficient time to indicate that more time is required.

Give users sufficient time for timed responses

Provision p: When a timed response is required, the user shall be alerted and given sufficient time to indicate that more time is required.

Importance: Some users have difficulty reading or responding to information if it is displayed briefly or if it requires a quick response. However, many Web pages are designed to time out for security reasons. Response delays can also be caused by assistive technologies used to read the page. Users should be notified that the process is about to time out and be given the opportunity to indicate whether additional time is required.

IBM Rational Policy Tester Accessibility Edition helps by identifying and reporting on all timed redirects and refreshes.

For more information

To learn more about IBM Rational Policy Tester software, contact your IBM representative or IBM Business Partner, or visit:

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