508 XPRESS
VHA Section 508 Office
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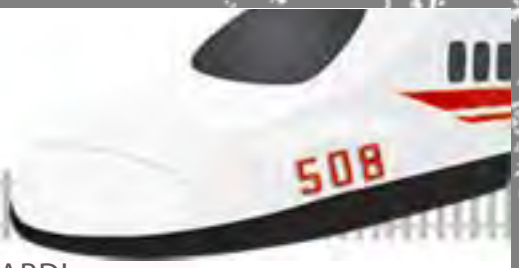


THE 508 XPRESS IS ROLLING INTO YOUR STATION NOW. HOP ABOARD!

Alternatives to Flash Revisited

For quite a while, it was difficult for Flash developers to make their products accessible to users with disabilities. Much of this had to do with the lack of an underlying framework to support accessibility, and a lack of knowledge of how best to implement Flash accessibility. At that time, there was no other choice but to provide a non-Flash alternative that was accessible and provided the same functionality.

Luckily, this is no longer the case. With the right approach, Flash content can be made accessible to most users.

Not all mobile platforms support Flash. The increasing use of mobile apps and mobile browsers – along with Adobe's announcement of discontinuing support for Flash on mobile devices – brings back the issue of the non-Flash alternative.

This brings us back to accessibility and Section 508 compliance. Our office is sometimes asked, "Because we have to make a non-Flash alternative anyway, can't that serve as the Section 508 accessible version?" leaving the "so we don't have to make our Flash accessible" unspoken.

Section 508 states that if a page cannot be made accessible in any other way, then an alternative must be produced that provides the same functionality. That was meant for situations where the technology could not be made accessible. Because Flash can be made accessible, steps must be taken to ensure it meets accessibility requirements.

If an alternative mobile page needs to be developed, it must conform with Section 508. Developers should not prescribe which version of a website users with disabilities have to use. Instead, sites and apps should be developed to incorporate best practices that ensure users can get the most out of the page they choose to visit, regardless of the access method they employ.

The key is to plan the design of any page or app with full accessibility in mind. If the prospect of developing and maintaining two versions is daunting, consider developing a single site that is usable to as many people as possible – mobile and desktop – that works well with and without assistive technologies.

Seven Tips for Webmasters

Here are seven tips to help Webmasters make their sites more accessible to users of assistive technology:

- Alternative Text - Include clear, concise descriptions in the alt attributes of images and non-textual elements that convey relevant information. Provide null alt attributes (alt="") for images that do not convey meaning.
- Skip Navigation – Provide a Skip Navigation link with an anchor that allows users of assistive technology to jump directly to the main content of a page. This most benefits people who use the keyboard to navigate, so it should be visible to those who could use it.
- Link Names – Assign names that have unique meaning to links; "Benefits" is a better name than "Read more"
- Forms – Form fields should use appropriate labels, names and titles to support users of assistive technology. Labels should be directly associated with their form field(s).
- Page Structure – Implement consistent use of heading levels to appropriately convey page structure.
- Tables – Ensure table header tags are used to identify column and row headers.
- Keyboard Access – Make certain that actions can be performed by both the mouse and by the keyboard, which is critical for users of assistive technology and those who do not use a mouse at all.

Inside This Issue:

Windows 7 Rollout and Accessibility

Over the next six months or so, VA will be rolling out machines with the Windows 7 operating system, Office 2010 and Internet Explorer 9. Depending on the age of your computer, you will either be provided with a new machine or have your current machine reimaged. Our office is working hard to make the rollout as smooth as possible for users of assistive technology. We're working with the rollout team to ensure that accessibility considerations are taken into account as the image that will be on all machines is developed. We are also putting together a library of resources for end users of assistive technology. This library of resources* will be available to VA employees on the VHA Section 508 website.

When you receive your new machine, you will find a shortcut on the desktop called Windows 7 Landing Page. This will open a website full of resources. On that page are two lists, one for products and one for user forums. We have made sure that there is a 508 category in each of the lists. The products list contains links to topics, tips and training on the various products that will be part of the new machines. It includes such items as, Windows 7, Microsoft Word, Internet Explorer, etc. The user forums have similar items, but they are for the exchange of tips and tricks, the asking and answering of questions, all by end users. If you enter the 508 user forum you will find a link directly to our page referenced above.

When we say that we are working with the rollout team, what does that mean? Here's an example: All VA employees have mandatory training in the VA TMS. Some of those mandatory courses are Java applications. In order for Java applications to communicate properly with assistive technologies, certain conditions must be met. Due to the thorough testing performed by a member of our team, these conditions will be met on the new machines.

Screen Readers	Version Number	Contact Information
JAWS for Windows	12.0.1158 or 13.0	www.freedomscientific.com (800) 444-4443
Window-Eyes	7.5	www.gwmicro.com (260) 489-3671
System Access	3.3.16	www.satogo.com www.serotek.com (866) 202-0520
NVDA	2011.3	www.nvda-project.org
Screen Magnifiers	Version Number	Contact Information
Zoomtext	9.1 or 10	www.aisquared.com (802) 362-3612
MAGic	11.0.4369	www.freedomscientific.com (800) 444-4443
Speech input/ Voice Control	Version Number	Contact Information
Dragon NaturallySpeaking	11.0 or 11.5	Nuance Communications www.nuance.com
J-Say Professional	9.0 or 9.1	www.ngtvoice.com (425) 744-1100

One of the most important things that assistive technology users need to do sooner rather than later is make sure that their assistive technology is up to date.

The table, which is located at the bottom of this page provides the versions for most assistive technologies that will be required for the Windows 7 64 bit machines with Office 2010 and Internet Explorer 9.

Please note that these are the recommended versions of each program that will work on the new machines at the time of this writing. Some of these technologies will have newer versions soon. Rather than simply giving major release versions, you will notice that the version numbers are specific as to the build. For example, if you own JAWS 12, you need to make sure that it is JAWS 12 build 1158 or higher.

Those who are dependent upon assistive technology may request the appropriate tools at the Computer/ Electronics Accommodations Program (CAP) website.

**Links designated with an asterisk are available to VA internal users only.*

Creative and Accessible!

We'd like to recognize the development team of Dawn Carroll and Ryan Keneally for their creatively produced courses called "Do No Harm" and "The War Back Home". These intriguing courses are Flash-based. Flash can be somewhat tricky to make accessible without strong Flash skills and a solid understanding of Section 508 requirements. This team obviously possesses both.

The courses are like watching a movie. A scenario is presented and then the learner is given options to select her interpretation of what she has just observed. Once a choice is made, the next scenario is presented. What appears in the subsequent scenario depends on how the learner responded to the one before. The content is engaging and the presentation quite creative.

Congratulations to the development team!

The Importance of PowerPoint Z-Order

The order in which objects are presented on PowerPoint slides is important because screen readers convey slide content based on various factors, not necessarily the way the objects appear visually. For example, the intended reading order may be the slide title, a list of bullet points, followed by a chart of data and a picture in the lower right corner. However, depending on the reading order, the screen reader may indicate the chart of data first, followed by bullet points with a picture containing alt text in their midst and the slide title indicated last.

The reading order is determined by the order in which the objects are layered on the slide, which is also called the Z-order. The Z-order will dictate the reading order of the objects to certain screen readers. Information on how to fix the Z-order and other useful information about making your slides Section 508 compliant can be found on our Microsoft Office Products page.*

SETTING Z-ORDER

You can check the Z-order of the objects on your slides by tabbing through them while in Design View. The tab order of the objects is the same as their Z-order from lowest to highest. If the tab does not follow your intended reading order, you can change the Z-order to make sure that the JAWS screen reader will read the slide correctly.

TO CHANGE THE Z-ORDER:

First Method

1. Select the object that should be read first.
2. Select the context menu (right mouse click on object border or shift+F10).
3. Select "Bring to Front."
4. Select the next object to be read and select "Bring to Front" from the Context Menu.
5. Repeat for all objects on the slide until the Z-Order matches the intended reading order.

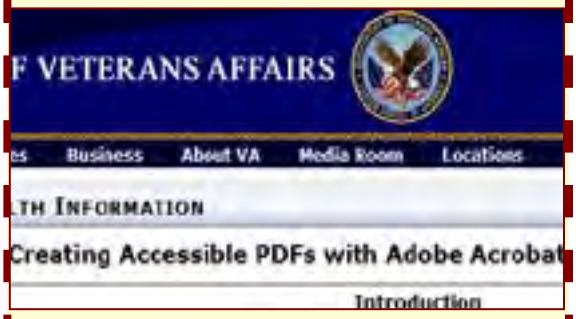
Layered objects appear with 1 in the back, 2 in the middle and 3 as the foremost object.

Second Method:

1. Select Selection Pane from the Arrange section of the Format Tab on the ribbon.
2. Use the Re-order buttons to set the reading order from bottom (read first) to top (read last).

**Links designated with an asterisk are available to VA internal users only*

Creating Accessible PDFs



Do you create PDF documents for posting on the web? Do you attach PDF documents to email messages? Our office has developed some innovative tutorials that will help you make sure your PDFs meet the requirements of Section 508.

The set of tutorials, called "Creating Accessible PDFs with Adobe Acrobat Professional X", include short topic-specific modules and brief videos that will help you gain an understanding of barriers that prevent users of assistive technology from accessing certain PDF content. Through the videos and step-by-step directions, you will learn to create PDFs that comply with Section 508 and help make your content accessible to your entire audience.

Topics include:

- Preparing Scanned Documents
- Ensuring Proper Page Structure
- Tagging for Logical Reading Order
- Providing Alternative Text for Images
- Hiding or "Artifacting" Non-meaningful Content
- Using Headings to Provide Structure
- Building a Proper List Structure
- Making Tables of Contents Accessible
- Adding Bookmarks
- Creating Accessible Links
- Using Color in an Accessible Way
- Constructing Accessible Tables
- Designing Accessible Forms

The tutorials are available at: www.ehealth.va.gov/508/tutorials/pdf/ .

Visit our website today and let our tutorials help you make your PDF documents available to everyone.

Avoiding Common Violations

LEARN HOW TO AVOID THESE SO YOUR CONTENT WILL PASS ACCESSIBILITY TESTING MORE QUICKLY.

From October through December of 2011, the most common violations our office helped remediate fell into one of three categories.

COLOR CONTRAST

Providing good color contrast is helpful to most users, but it is especially useful for persons with a variety of visual impairments. Regardless of media type — HTML, PowerPoint, PDF, Word — applying the following guidelines is an easy way to ensure sufficient contrast in most cases.

- Text under 18-point requires a ratio of 4.5:1.
- Bold text under 18-point or text that is 18-point or greater requires a contrast ratio of 3:1.
- Use a color contrast checking tool such as one of the following:
  - Color Contrast Checker
  - InFocus Toolbar
  - Contrast Analyser
  - Contrast Checker

To check the color contrast, open the page or document. Then use the tool to check that all text and meaningful images have contrast ratios within the appropriate range.

Note: Black and white text will pass and does not need to be tested.

ENSURING PROPER READING ORDER

Particular care must be taken to ensure that assistive technology conveys information to the user in the intended reading order. Whether providing content in PDF, Flash or in HTML, ensuring reading order is important.

PDF

Proper reading order is when document tag structures adhere to a logical order that is the same as the order of the document implied from the visual layout. For Adobe Acrobat documents, this means that the reading order of the document is a function of the order of tags in the tags tree or the order of elements in the Order pane. Assistive technology will render document content in the order that it appears in the tag tree structure and Order pane. Thus, documents must be tagged in the correct order for users of assistive technology to properly read document content.

Proper reading order means that the tag structure of the Adobe Acrobat document follows the implied visual reading order of the document. For example, in a two-column layout, a user first reads the left column content before reading any of the right-column content. However, without direction, screen readers are liable to read the content by lines and ignore the reading order implied by the document columns.

To address the requirements from this example, authors need to ensure that the tag structure of the document contains all the text content in the first column and then all the text content in the second column. This tag structure will ensure that both sighted and non-sighted users receive the same presentation of information from the document and that the document content makes sense when rendered by assistive technology.

HTML

Reading order in web pages is similar to reading order in documents; it's about making sure that a screen reader user can read through the page in an order that makes sense. For example not finding buttons in the middle of an article when they actually appear after the text, or in a place where someone looking at the page would think of them as after the text. Reading order is related to tab order but is not the same thing. Screen reader users don't use the tab to review text, they use it to navigate through elements that are interactive. For many screen readers, reading order is determined by the order the text appears in the source. So, if you have a block of text that is styled to appear in the middle of a page, but is coded at the end, a screen reader will read that section at the end of the page, out of the intended reading order. The way to fix this is to move things around so that the flow in the source matches where it ought to be read, and then style it to fit the look you want.

Flash

In Flash, reading order is the order in which elements within a Flash movie are rendered in assistive technology. The reading order is defined based on the tabIndex attribute of an element. Thus, the tabIndex attribute of elements plays two purposes: it defines the keyboard tab order if the element is in the tab order, and it also defines the reading order of elements that are not in the tab order. Assistive technologies, such as screen readers, provide access to these elements through a virtual representation of the page similar to a word processor. When an element has an action listener but does not have a tabIndex, the reading order is determined automatically in Flash, based on the X and Y coordinates of the registration point of each object. In Flash 8 and above, Flash will properly integrate elements with and without a tabIndex in a reasonable reading order. However, in Flash 7 when some elements contain tabIndex and others

do not, Flash will automatically put all elements in an x/y reading order and ignore the tabIndex attribute. Flash 7.0's automatic reading order; however, does not always result in a reading experience similar to the expected reading order. Thus, it is important that all elements provide a unique tabIndex property.

The tabIndex property for all the elements can be set using ActionScript and updated dynamically as the tab order of the application changes. All objects that are not part of the reading order must have the silent field of their _accProps property set to "true". This is true of objects that are onstage, offstage or at any point in their life cycle are present in the movie. When rollover content appears after a user action, the content should appear later in the reading order (higher tabIndex) than the element that generated the rollover.

When pop-up layers are used to display dialogs and other content, inactive content should be silenced to ensure it is not seen by assistive technology. For example, all grayed-out, inactive content should have the silent property set to "true" and movie clips that have accessible children should have the forceSimple property set to "true".

PowerPoint

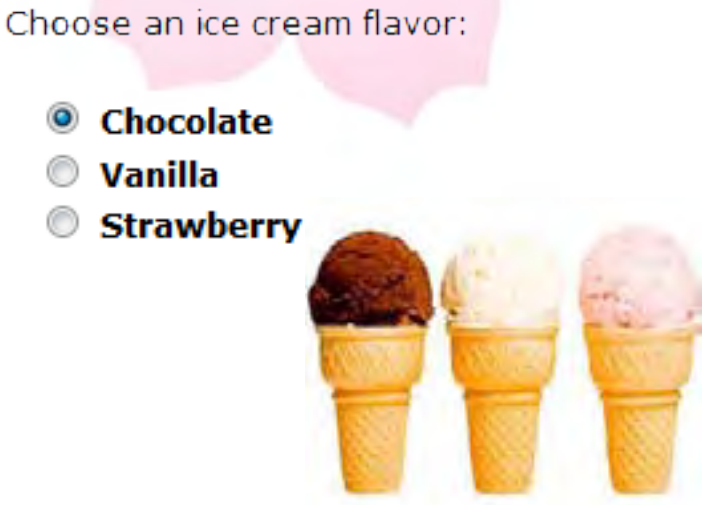
Refer to The Importance of PowerPoint Z-Order in this issue.

ENSURE THAT FLASH OBJECTS CONTAIN TEXTUAL NAMES, DESCRIPTIONS, ROLE, STATE AND VALUE

It is important that Flash objects have textual names and that the object's role, state and value are also made available for assistive technologies to identify and report such information to users. Using standard components, such as standard checkboxes and radio buttons, will ensure such information is accessible.

What do role, state and value refer to?

- Role is the type of control – checkbox, radio button, etc.
- State indicates the status of the control – a checkbox is checked, a radio button is selected, etc.
- Value describes what the control is about – a checkbox that says, "Yes, add me to your mailing list," or for a group of radio buttons for your favorite flavor:



508 Champion

Our office recently learned how Jerry Bailey, Web Administrator of the Veterans Health Care System of the Ozarks, is promoting Section 508 and making it fun at the same time. For the past eight years, Jerry has been pressing the hospital staff in Fayetteville, AR to make Web content accessible. He has gathered tutorials from numerous sources, provided hundreds of classes and encouraged staff to refer to the VHA Section 508 checklists. With pride, Jerry says, "Things have gotten so much better around here that I now offer a monthly quiz related to one or two aspects of accessibility. The quizzes are small, asking how to properly format a list or form field. Some quizzes require the participant to tell me why a document doesn't meet accessibility standards. Inspiration for the quiz topic usually comes from a poorly formatted document that lands on my desk." Jerry provides a small prize to the first person to give the correct answer. Jerry says, "While I want people to appreciate and develop content that meets accessibility standards because it's the right thing to do, I also know that sometimes a little honey helps win people over and improve morale."

Kudos to Jerry, a true 508 champion!

Get Onboard!

It is now possible to be alerted as soon as a new edition of the 508 XPress becomes available. Just visit http://www.ehealth.va.gov/508/newsletter/ and activate the link to Subscribe to Our List.

Visit the VHA Section 508 Web site to review Section 508 checklists; training materials for developing accessible content in Flash, HTML, Word, PDF and PowerPoint; and to locate additional resources.

Internet:
www.ehealth.va.gov/508/

Intranet:
vaww.vista.med.va.gov/508workgroup*

**Links designated with an asterisk are available to VA internal users only.*