

Creating Accessible PDFs

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Adobe Acrobat 6.0 Professional for Windows

Publisher:

Adobe Systems

<http://www.adobe.com>

<http://access.adobe.com>

Retail Cost:

See Price List from Foundation for California Community Colleges for Educational Discount

<http://www.foundationccc.org>

System Requirements:

- Intel® Pentium® processor (not yet possible to create tagged PDF from MS Office in OS X system)
- Windows NT® 4.0 with Service Pack 6, Windows 2000 with Service Pack 2, Windows XP Home/Professional
- 64 MB of RAM (128 MB recommended), 245 MB of available hard-disk space
- CD-ROM, MS Internet Explorer 5 or greater

Description

Adobe Systems PDF format is widely used online for dissemination of documents. A PDF (portable document format) file is a graphical file that is an exact image of a document originally created by another application (e.g., MS Word file) and then converted by Adobe Acrobat into PDF format. A PDF document can be viewed using Adobe Reader, which is a free viewer program that provides access to the PDF document. The Adobe Reader viewer allows users to view and enter information into a PDF document (where applicable) as well as enlarge the viewing area of the document.

Accessible PDF documents can be created using the Adobe Acrobat software application in conjunction with Microsoft Word, Excel, PowerPoint 2000/XP applications. The use of Adobe Acrobat and a supported word-processing application creates a "tagged" PDF document, where document presentation is separated from document content. Assistive computer technology applications have the capacity to then read the "tagged" PDF document to communicate information to the user.

Basic Use

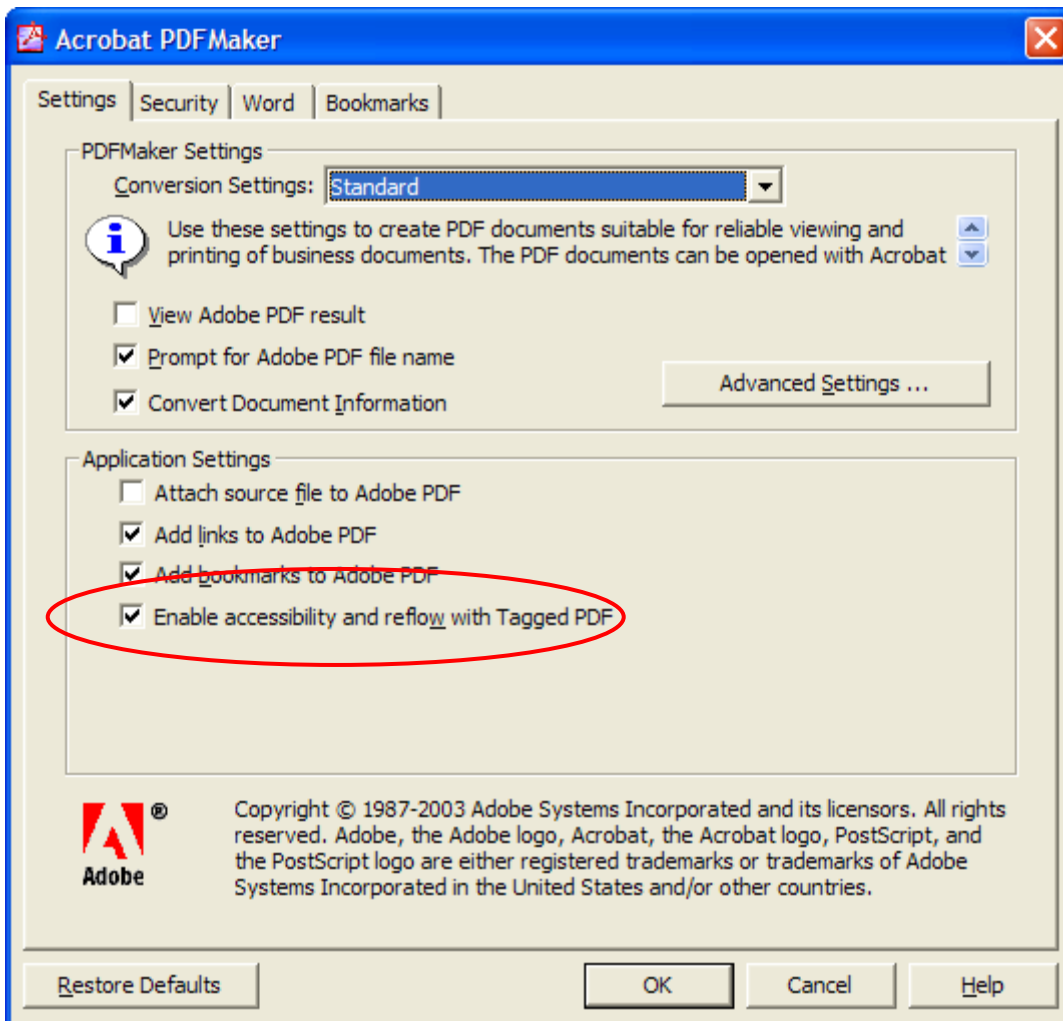
Instructions for downloading and installing the latest versions of Acrobat Reader as well as additional Acrobat plug-ins to increase the functionality and accessibility can be found at <http://access.adobe.com>. While this manual focuses on the use of Adobe Acrobat 6.0 Professional to make content accessible, it is possible to use Adobe Acrobat 6.0 Standard as well (**Note:** Acrobat Standard does not support form development).

Creating a New PDF Document

Creating a new PDF document offers the most flexibility to insure accessibility is designed into the document. Adobe Acrobat 6.0 is designed to work effectively with MS Office 2000/XP applications (i.e., Word 2000/XP, Excel 2000/XP, PowerPoint 2000/XP, etc.) to create a "tagged" PDF structure. Before a document can be translated to a PDF document format, it is necessary to check the conversion settings of the Adobe Acrobat PDFMaker within Microsoft Office.

To check conversion settings:

1. Open a document in the Microsoft Office application.
2. Choose Adobe PDF from the menu bar and select Change Conversion Settings.
3. Make sure that "Enable accessibility and reflow with Tagged PDF" is checked.
4. Select "OK".



Creating the PDF Document:

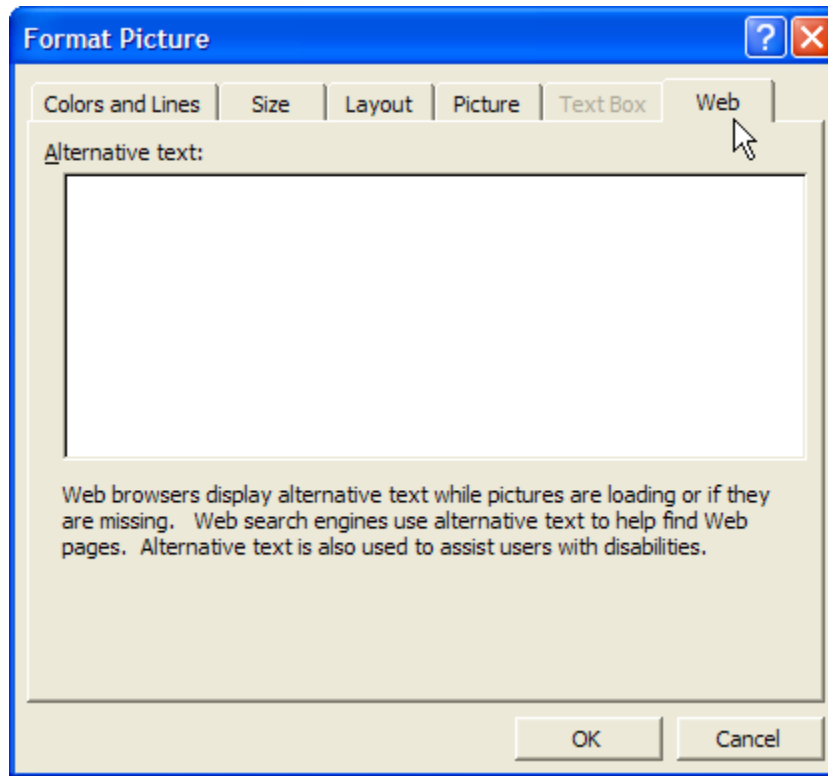
1. Create/open the document in the Microsoft Office application.
2. Use the styles and formatting elements provided in the Office application to control the presentation of the document. For example, do not use tabs and spaces to visually present a two-column document. Rather, use the column-formatting element to control the presentation of the information. Styles can be manipulated under **Styles and Formatting** from Format in the menu bar.
3. Choose Acrobat from the menu bar and select Convert to Adobe PDF (or click the Convert to Adobe PDF button on the application toolbar).
4. Name and save the file.
5. Open Adobe Acrobat and view the document's tagged structure to insure the information is contained in the correct order.

PDFs with Images

If using images in a PDF document created from MS Word/Excel/PowerPoint, it is possible to add alternative text to represent the image for individuals using assistive computer technology. This method should be used for image content that is relatively simple and does not require extensive description of the image. If a longer description of the image is necessary to fully explain its content, consider inserting a more detailed description of the image within the document text that precedes and follows the image.

To insert simple alternative text:

1. Create/open the document in the Microsoft Office application.
2. Select the image and perform a right-mouse button click and select "Format Picture" from the options. Alternatively, you may select the image and choose "Format" from the menu bar and then "Picture".
3. Under the "Web" tab, enter a short text description of the image. Be descriptive as to what the image is and the purpose of the image. For instance, if using a screenshot of the PDFMaker window in Adobe Acrobat, identify the image as "Screenshot of the PDFMaker in Microsoft Office using Adobe Acrobat 6 identifying the checkbox "Enable Accessibility and Reflow with Tagged PDF" is checked."
4. Select "OK" and continue with the document creation.



Converting Existing PDF Documents

Adobe Acrobat 6.0 continues to separate presentation from content when using a PDF file. Older versions of PDF may have been created using Acrobat versions previous to version 6, made without using the style elements of Microsoft Office to format the presentation of the document, or another program that exports to PDF. The result is a PDF document that does not contain a "tagged" document structure making it more difficult for assistive computer technology to gain access to the document information. In fact, the PDF document may actually be only a "picture" of the information (i.e., Image-Only PDF) with no underlying text information. Working with the original file the PDF document was created from can be more precise in creating a "tagged" document structure and result in improved access to the information by assistive computer technology. The following recommendations are designed to provide guidance when having to choose what type of method is most appropriate to create an accessible PDF document.

Recommendations when using MS Office applications:

1. If the original document is available, open that file in a Microsoft Office application (if possible). Format the presentation of the document using the style elements found under Format on the menu bar. Remember to add an appropriate "alt-tag" to graphics containing or representing important information through the Picture Properties menu. Once this process is complete, follow the directions under the Creating the PDF Document section.

2. If the original document is not available (or cannot be opened in a Microsoft Office application), open the PDF document in Adobe Acrobat 6.0. Then, follow the directions in the next section, titled "Adding Tags to a PDF Document".
3. If the PDF document exists in an "Image Only" file format, it will be necessary to use the Paper Capture tool in Adobe Acrobat or Adobe Capture software application. The Paper Capture tool or Adobe Capture software provides Optical Character Recognition of the PDF document image to yield a document containing actual text content (not a graphic representation of the image). This is similar to originally starting with a TIFF document from a scan, and then using an OCR program such as OmniPage to recognize the actual letters and symbols on the page. The Paper Capture tool in Adobe Acrobat may be found under the "Document" heading from the menu bar.

Adding Tags to a PDF Document

Adobe Acrobat 6.0 allows users to create a tagged PDF document from untagged PDF files. Tagged PDF documents are necessary for greater user accessibility as well as the capacity to save a PDF document into alternate formats (e.g., HTML, Accessible Text, RTF, etc.). Additionally, tagged PDF documents provide the ability to "reflow" the text information in a PDF file to fit different screen dimensions.

If creating electronic forms, it is necessary to use Adobe Acrobat 6.0 Professional to create accessible form fields. Alternatively, if the forms may require updating on a regular basis, it is recommended to review Adobe's Forms Access Tool (approximately \$99). More information about the Forms Access Tool is available at:

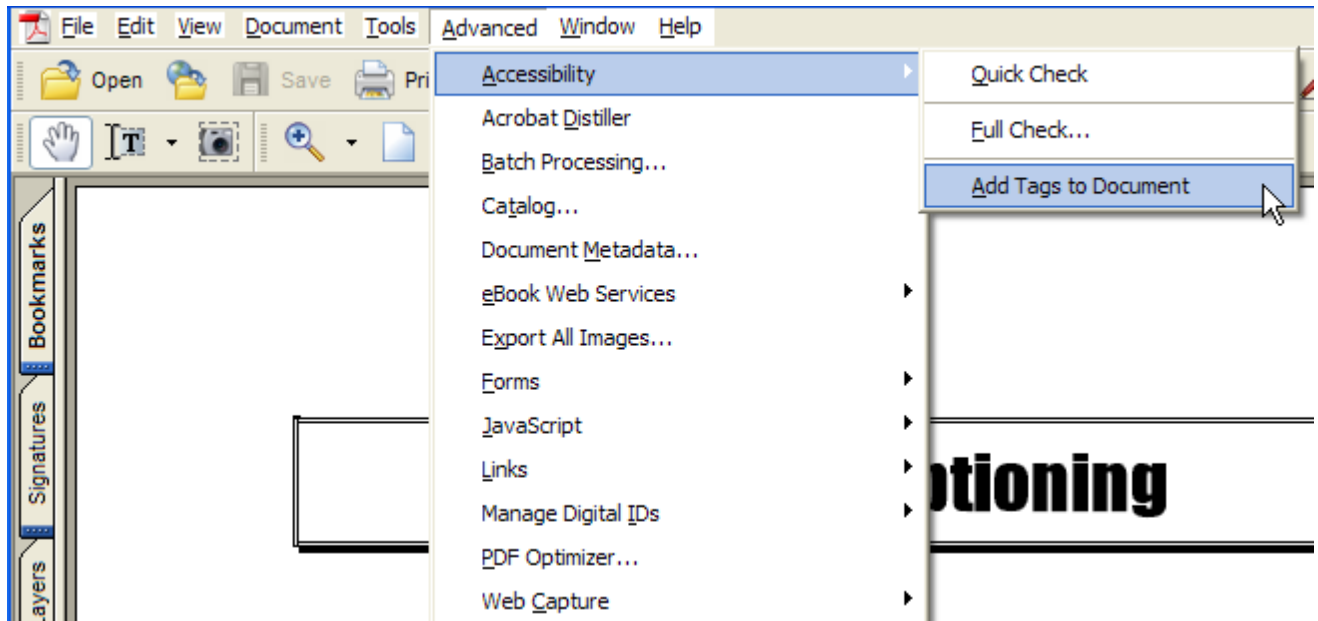
<http://www.adobe.com/products/acrcapture/agentpack/main.html> .

Adding tags manually to a PDF document does have some limitations. While it is capable of generating a tagged PDF document from a non-tagged PDF document (i.e., PDF created in earlier version of Acrobat), there is difficulty when interpreting logical reading order of the PDF document. Documents that contain regions of high complexity, such as certain layouts, may not provide a tagged structure that follows the logical reading order of the original document. Any graphics or charts in the PDF document may not be processed correctly and may be rendered as "Figures" or "Inline Shapes". It is necessary to identify these items and add the appropriate alternative text descriptions.

Adding Tags:

1. Open the PDF document that does not contain the tagged structure.
2. Select Advanced from the menu bar.
3. Select Accessibility.
4. Choose "Add Tags to Document".
5. After the program finishes processing the document, use Save As and save the file with a new name.
6. Open the new PDF document to check the logical order of the tagged file.

Note: A shortcut method of assessing the logical reading order of the tagged PDF document is to save the PDF file as text. Check the logical reading order of the text file as to where there may be errors in order of the tags in the PDF document. This is still no guarantee that the reading order is correct, however.



Using the Tags Palette

The Tags Palette provides the user with the ability to view the underlying content structure of the PDF document and make necessary changes to increase the availability of content to assistive computer technology. With the Tags Palette, the PDF document creator can manipulate the "root" structure of the document as well as the informational content contained within the various tag levels. For example, a PDF document author can insert "alt-tags" for graphical elements that may be considered to have content meaning after creating the PDF document.

To open the Tags Palette:

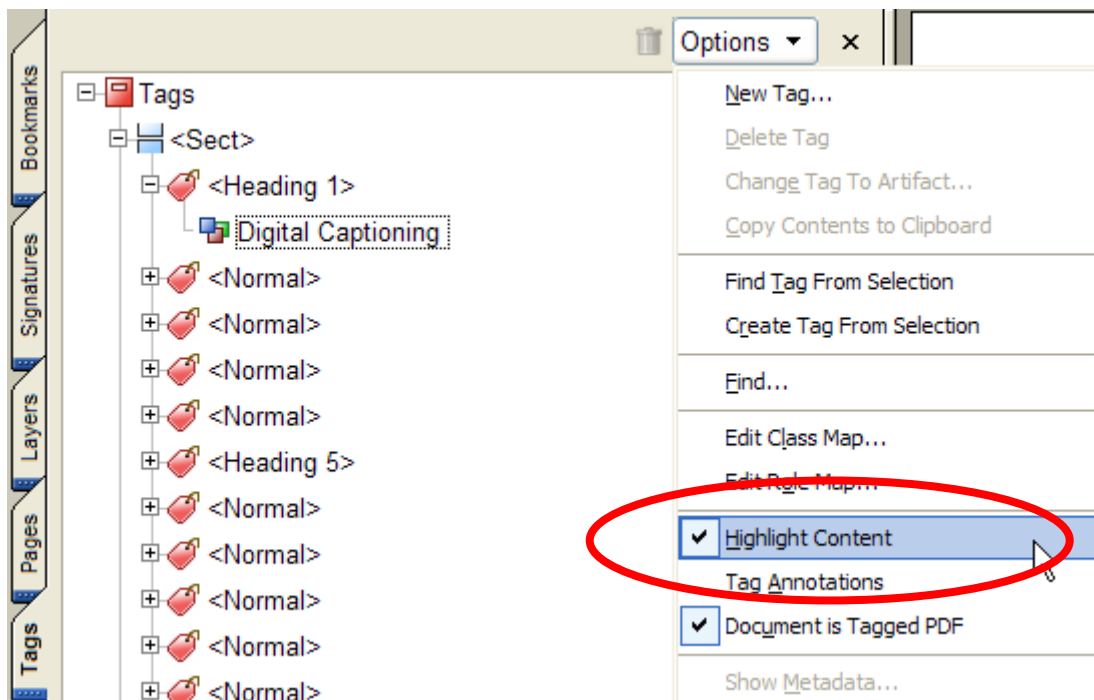
1. Open a tagged PDF document in Adobe Acrobat. A non-tagged PDF document will not show information in the Tags Palette (you would need to reference "Adding Tags to a PDF Document" for more information on adding tags).
2. Select "View" from the menu bar and then select "Navigation Tabs".
3. Choose "Tags" from the menu. Drag the "Tags" tab to the left side of the screen next to the tab labeled "Bookmark". This will provide easy access to the Tags Palette while working on a document.

Once the tagged structure of the PDF document is revealed, it is relatively easy to make changes to the content structure. Simply select the appropriate level heading where you wish to make the change and click the right-mouse button. The menu will provide different options based on the heading content you have selected. For instance, it is not possible to add a **New Child Element** to the actual content in the Tags Palette, but you may add a **New Child Element** to the heading associated with the appropriate content. In this way, it is possible to add alternative text for graphics or provide the necessary accessibility options when creating forms for PDF documents.

To add alternate text from the Tags Palette:

1. Find the element that requires alternate text in the Tags Palette.
2. Select the appropriate tag heading. This may be **<Figure>** or **<Object>** depending on the style format specified in the original (i.e., non-PDF) document.
3. Perform a right-mouse button click on the appropriate tag heading and select Element Properties.
4. Enter the appropriate alternative text for the graphic in the Alternate Text field.
5. Select OK and move to the next item.

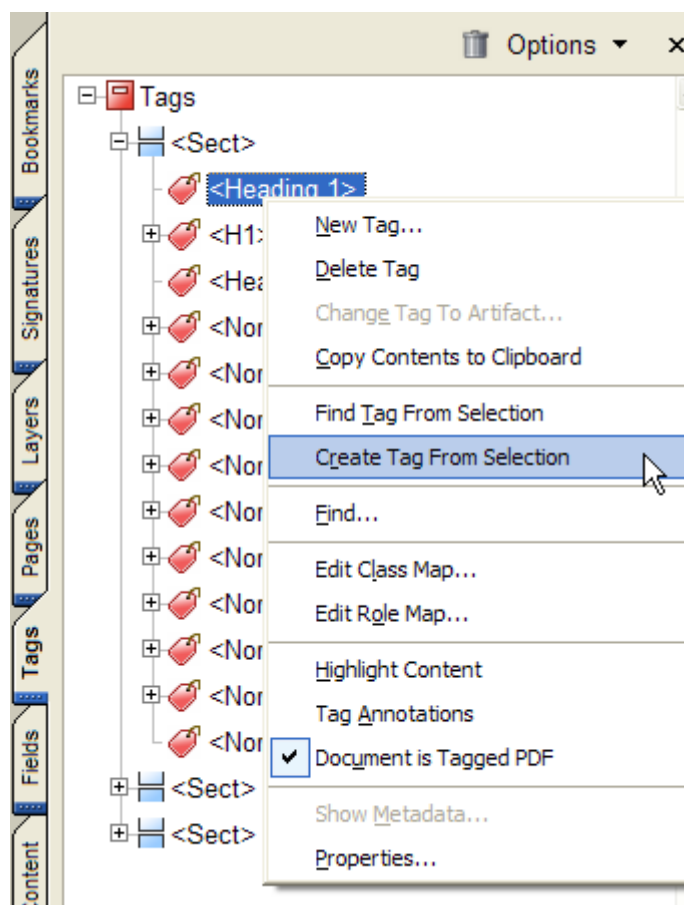
It may be difficult to locate the specific tag for a given image (or text block) when working in a document. It may be easier to locate content and the respective tag by enabling the "Highlight Content" feature in the Tags Palette. The Highlight Content feature is available from the "Option" menu in the Tags Palette or by performing a right-mouse button click on a tag.



Often tagged levels will appear in the Tags Palette, but not refer to page content or improperly refer to PDF document content. It is possible to remove (or add) information to make the PDF document content more accessible to assistive computer technology.

To add content to the Tagged Structure:

1. Select "Tools" from the menu bar.
2. Choose "Advanced Editing" from the menu. Select the "TouchUp Text" tool to add text or the "TouchUp Object" tool to add an object.
3. Select the content that appears in the PDF document, but is not in the Tags Palette. (You may also see a blue outline around the content you selected)
4. In the Tags Palette **and in the correct logical reading order location**, perform a right-mouse button click and select "New Tag...". This will prompt you to add a new tag element.
5. Once again, select the new tag you just created and perform a right-mouse button click. Choose "Create Tag from Selection". This will add the content highlighted in the PDF document as new information into the Tags Palette under the specified heading.



Note: It is critical that when entering tag information manually, the logical reading order is assessed and the information is added in the correct reading order.

To remove content from the Tags Palette:

1. Select the appropriate tag heading in the Tags Palette.
2. Perform a right-mouse button click on the appropriate tag heading and select Delete Element to remove tagged information. The tagged information will be removed, but will still be present in the PDF document view. However, **the content will not be available to assistive computer technology!**

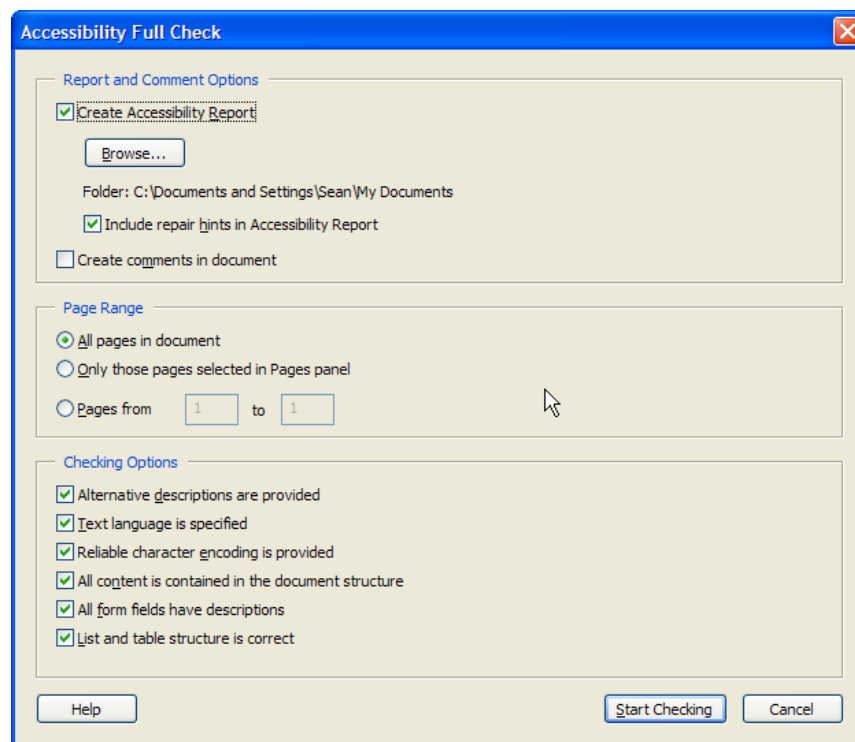
For more information on using the Tags Palette to create accessible PDF documents, please view the **Advanced Techniques for Creating Accessible PDF Files** manual from Adobe Systems.

Accessibility Checker

The Accessibility Checker is a small tool designed to identify potential errors in the accessibility of a PDF document and provide information as to where these errors are located within the document.

To use the Accessibility Checker:

1. Open the tagged PDF document in Adobe Acrobat 6.0.
2. You may choose to generate a report as a text file and identify where that report is saved. Choose "Browse" to locate the report in a different folder.
3. Select the various accessibility options that you wish Acrobat to evaluate.
4. Select "Start Checking" to run the Accessibility Checker.



The Accessibility Checker will evaluate a PDF document to identify potential accessibility errors in the file. However, the Accessibility Checker should not be used to evaluate the PDF document for the logical reading order or to identify if alternate descriptions are correct. Rather, the Accessibility Checker simply evaluates the technical accessibility of the PDF document and whether or not the correct tags have been included in the document. Additionally, there are elements the Accessibility Checker will mark as potential accessibility errors that may not cause a problem for screen-reader technology or other assistive computer technologies. It is necessary to review the original document with the appropriate assistive computer technology as well as check the tagged document structure for possible errors.

Evaluating Logical Reading Order

While the Accessibility Checker does not assess the logical reading order of a document, it is possible to save the PDF document as a Text-Only file, which in turn can identify errors in the flow of information. To assess the logical flow of text information, open the PDF document in Adobe Acrobat 6.0. Choose "File" from the menu bar and select "Save As". When you are prompted to save the file, under the "Save File As Type" menu, choose "Text (Plain)". This will extract the text content of the PDF document and will provide a means to manually assess the presentation order of information in the PDF document. While this is not a precise test for logical reading order, it can be used to quickly examine if there are major errors in how document content may be rendered by assistive computer technology.

Paper Capture Plug-In

The Paper Capture Plug-In provides Optical Character Recognition (OCR) for Adobe Acrobat 5.0. The Paper Capture Plug-In performs OCR on PDF document Image-Only files to extract text content that is searchable. The Paper Capture Plug-In contains the same technology that is used for the Adobe Paper Capture On-Line service, but will only support PDF documents up to 50 pages in length. PDF documents longer than 50 pages require the Adobe Paper Capture 3.0 software application. OCR support is provided for English, French, German, Brazilian Portuguese, Castilian Spanish, Danish, Dutch, Finnish, Italian, Norwegian, Nynorsk, Portuguese, Spanish, Swedish, Swiss, and German languages on both versions of the Paper Capture software.

In general, the Paper Capture Plug-In provides a service to those individuals unable to access the on-line version of the Paper Capture service. Both applications will perform OCR on a PDF document less than 50 pages and return a document that provides content searchable text. For additional functionality, including batch processing and zone processing, it is recommended to use the Adobe Paper Capture 3.0 OCR software application.

Creating Tables

Tables provide the ability to visually present related pieces of information in a quick and easy format. Similar to data tables on the Web, assistive computer technology is not able to recognize tables and render the content information in a recognizable manner to the user. Rather, the user generally must navigate through the table hearing information, yet not understanding the relationship between different pieces of content as displayed on the screen.

To create a table for a PDF document, it is necessary to use the Table formatting option in the appropriate word processing program. **Do not use "spaces" or "tabs" to visually format a table as this will create the incorrect content in the root tagged PDF document!**

Once the PDF document has been created using Adobe Acrobat 6.0, it may be necessary to check the tagged structure of the table in the Tags Palette.

Suggestions for a tagged PDF table:

1. The <Table> element should be the first markup "tag" before any content in the table is described.
2. Following the <Table> element, the <TR> element should be the next child element as this contains all the information for the first, second, third, etc., row. <TR> is the table markup for Table Row.
3. After <TR>, the next child element should be either <TD> or <TH>. <TD> is the markup for Table Data and represents the information within a specific cell. <TH> is the markup for Table Header and represents the Column Header data for a specific column.

While assistive computer technology can recognize the <Table> tag in the tagged PDF, it may not recognize the correct column and row heading information even after this content is properly identified. This is a current issue with assistive computer technology and should be considered when creating highly complex data tables.

Creating Forms

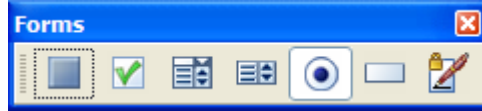
Forms in PDF documents allow users to enter content into a form field and either print the PDF page or save the document to file. Similar to Web page forms, PDF document forms can be created as a one-line Text box, Combo Box, List Box, or Radio Button. Additionally, information can be added to PDF forms to improve the ability of assistive computer technology to access the form field and prompt the user to input the correct information.

Another application that you may wish to consider is the Forms Access Tool from Adobe. This tool allows for the easy creation of electronic forms and generates a tagged PDF file upon completion. This tool is recommended if you are using forms that may vary in layout or content over time and will significantly reduce the necessary time to re-create accessible PDF forms.

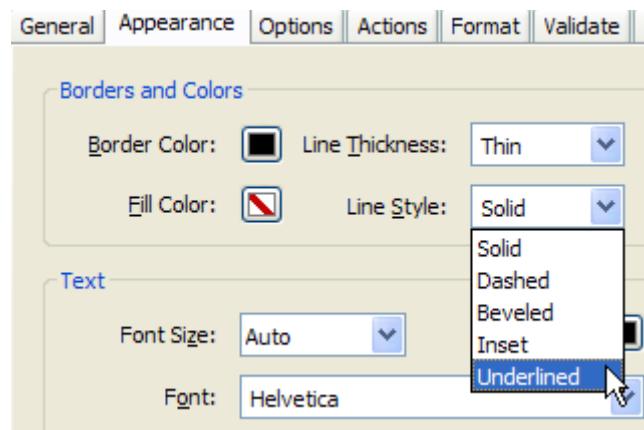
Note: It is very important to not use keyboard characters to visually format the form fields (e.g., create lines for signatures using the "underscore" character, etc.). Rather, use Acrobat or the Forms Access Tool to create these visual references when constructing PDF forms.

To create a form field:

1. Select the appropriate form tool from the formatting bar.



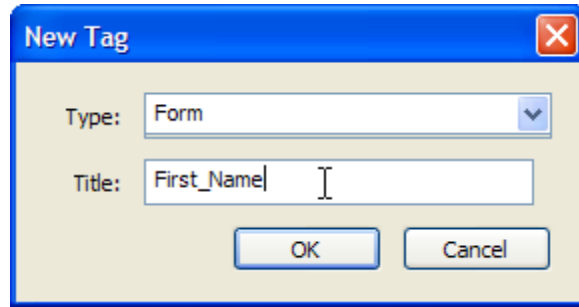
2. Create a form field of the desired size by clicking the mouse button and dragging the crosshairs to the correct dimensions.
3. Enter a unique form field name in the "Name" text field in the Field Properties dialog box.
4. Enter supporting information in the "Tool Tip" text field. The information provided in the "Tool Tip" text field can be accessed by assistive computer technology to prompt the user to enter the correct information.
5. Under the "Appearance" tab, choose the options you desire for your form field. Under the "Line Style" option, you may select "Underlined" to visually represent a line for information.



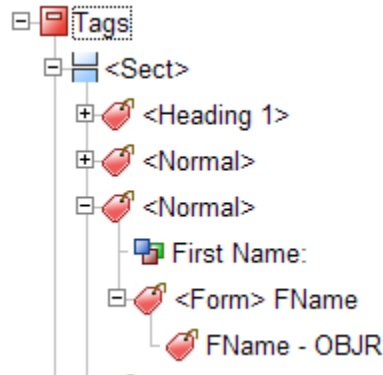
After you create the form fields in the PDF document, it is necessary to add this content to the Tags Palette. This provides the information to individuals using assistive computer technology to navigate and complete the appropriate form field elements.

Adding Form Fields to the Tags Palette:

1. Select the "Tags Root" tag. This is the highest tag in the document structure.
2. Select "Find" and choose "Unmarked Annotations".
3. Acrobat will then identify unmarked information in the PDF document. Select the "Tag Element" button and a New Tag window will appear.
4. In the "Type" list menu, choose "Form" and in the "Title" field enter the name of the form field. This will create a <Form> tag in the Tags Palette (this may appear at the end of the tags in the Tags Palette).
5. Move the <Form> tag until it is in the correct reading order for the PDF form document content.



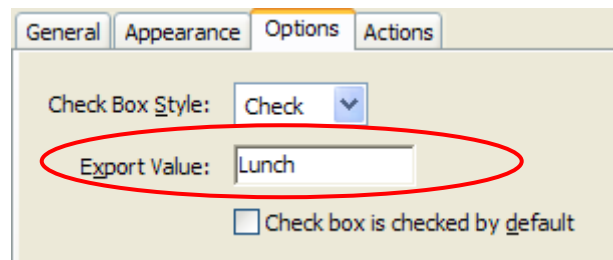
It will be necessary to verify the form field elements occur under the proper level in the Tags Palette. Open the Tags Palette to identify the location of the **<Form>** tag element. The **<Form>** tag should appear in the correct reading order in the tags root structure that is after the on-screen text. This procedure requires a mouse to move the tag under the appropriate heading.



Radio Buttons and Checkboxes

If your form requires the use of radio buttons and checkboxes, make sure to use these form input elements correctly. Radio buttons should be used when you wish to have only one answer reported (i.e., True or False, Male or Female, etc.). Checkboxes should be used when you wish to have none or more than one answer reported (i.e., A and B, Lunch and Dinner, etc.).

In either case, it is possible to identify the export value of the radio button and checkbox for a specific form input element. In the field properties window, select the "Options" tab and enter a value for "Export Value". This information will be spoken when using a screen-reader.



For additional information on creating PDF document forms, reference the Adobe Acrobat 6.0 Help Topics. Additional information can also be found in **Advanced Techniques for Creating Accessible PDF Files** manual from Adobe Systems. For forms that require periodic updating and editing, it is recommended to review the Forms Access Tool from Adobe as this may streamline accessible PDF form creation.

Increasing PDF Document Accessibility

There are several additional ways to increase the accessibility of a PDF document through web browser settings to saving as alternate formats to high-contrast viewing. Using Acrobat 6.0, it is possible to save the PDF document into alternate formats, change the text flow/layout of the PDF, or alter Acrobat settings for High-Contrast Viewing. The following procedures detail how to perform these functions.

Saving as Alternate Formats:

1. Choose "File" from the menu bar and select "Save As".
2. When you are prompted to save the file, under the "Save File As Type" menu, choose the format you wish to save the PDF document. Options include Text, Rich-Text, JPEG, XML, HTML, etc.
3. Choose the location on the computer you wish to save the file and select "Save".
4. Open the file with the appropriate application. Depending on the format you selected, you may not receive the entire text content of the original PDF document. This is a problem of the original accessibility of the PDF document.

Setting High-Contrast Viewing

1. Open the tagged Adobe PDF file in Acrobat 6.0.
2. Choose Edit > Preferences > Accessibility.
3. From the Color Scheme menu, choose Use Custom Scheme.
4. In the Document Colors Options area, check the checkbox labeled "Replace Document Colors". Choose your color options for Page Background and Document Text.
5. Select "OK".

Note: Windows also supports a high-contrast viewing mode. If you've already set up your Windows system for this mode, you can choose Use Windows Colors instead.

Reading PDF Documents in the Browser

Adobe Acrobat (and Adobe Reader) both offer the capability to view PDF documents from within the web browser interface. However, this integration can make it very difficult for individuals with visual impairments (or using screen-readers) to gain access to the PDF document content. It is possible to disable PDF integration with web browsers by following the steps below.

For Adobe Acrobat

1. Open Adobe Acrobat under the Administrator profile.
2. Choose "Edit" from the menu bar and select "Preferences".
3. Select "Internet", and then uncheck "Display PDF in Browser" and "Check browser settings when starting Acrobat".
4. Select "OK".

For Adobe Reader

1. Open Adobe Reader by double-clicking on the desktop icon or starting it from the Start menu.
2. From the Edit menu, select Preferences, then Options on the left side of the dialog box.
3. In the Web Browser options, deselect the "Display PDF in Browser" option and click OK.

JAWS Specific Keystrokes for Adobe Reader 5

Description	Keystroke
Forms Mode	ENTER
Virtual Cursor On	NUM PAD PLUS
Virtual Find	CTRL+F
Links List	INSERT+F7
Next Page	CTRL+PAGE DOWN
Previous Page	CTRL+PAGE UP
Go to Page	CTRL+N
Go to First Page	CTRL+SHIFT+PAGE UP
Go to Last Page	CTRL+SHIFT+PAGE DOWN

JAWS Specific Keystrokes for Adobe Reader 6

Description	Keystroke
Forms Mode	ENTER
Virtual Cursor On	NUM PAD PLUS
Virtual Find	CTRL+F
Links List	INSERT+F7
Next Page	CTRL+PAGE DOWN
Previous Page	CTRL+PAGE UP
Go to Page	CTRL+SHIFT+N
Go to First Page	CTRL+SHIFT+PAGE UP
Go to Last Page	CTRL+SHIFT+PAGE DOWN

Using JAWS with PDF Forms

JAWS can support the use of forms on PDF documents if created in an accessible format. Additionally, it is necessary for the PDF document creator to set attributes such as the tab index for form elements as well as the ability to enter content into the form fields of the document.

JAWS support includes:

1. JAWS speaks the MSAA (Microsoft Active Accessibility) provided information. The MSAA information in a PDF document is created by the author of the document. If MSAA information is not available for the control, JAWS states: "MSAA information is not available."
2. JAWS speaks the text that appears to be to the left of the active control. This text is spoken as the prompt if the active control is an edit field. **JAWS** does not attempt to "guess" the prompt text for other active controls such as check boxes, radio buttons, etc.

It may be necessary to turn off the MSAA prompt information in a PDF document if both the MSAA content and screen-reader attempt to speak the associated content. It is possible to turn off MSAA prompting and let the screen-reader identify the associated form field control.

To Toggle the Use MSAA for Form Prompts:

1. Press CTRL+INSERT+TAB.
2. Press INSERT+V to open the verbosity dialog. Arrow to the Use MSAA for Form Prompts setting, and press SPACEBAR to toggle the setting.

Using Window-Eyes for PDFs

The Window-Eyes screen-reader application uses the basic HTML navigation commands to read PDF documents. Below are commands for using the Adobe Reader 6.0 application. For specific information about Window-Eyes support for Adobe Reader 6.0, please review the Help menu in Window-Eyes.

Description	Keystroke
Forms Mode	ENTER
Virtual Cursor On	NUM PAD PLUS
Search	CTRL+F
Links List	INS + TAB
Next Page	CTRL+PAGE DOWN
Previous Page	CTRL+PAGE UP
Go to Page	CTRL+SHIFT+N
Go to First Page	CTRL+SHIFT+PAGE UP
Go to Last Page	CTRL+SHIFT+PAGE DOWN

Notes:

Web Resources

Adobe Acrobat 6.0 Website

<http://www.adobe.com>

Accessibility Information at Adobe

<http://access.adobe.com>

Accessibility Information and Support

Acrobat Accessibility Resources

<http://www.adobe.com/products/acrobat/solutionsacc.html>

On-Line Conversion Tools

http://www.adobe.com/products/acrobat/access_onlinetools.html

How to Create Accessible PDF Documents

http://www.adobe.com/products/acrobat/access_booklet.html

Advanced Techniques for Creating Accessible PDF Documents

<http://access.adobe.com/information.html>