Using redaction in Adobe® Acrobat® X

Best practices for removing sensitive text and images from documents

Redaction is the permanent deletion of visible text and images from documents. In the past, a black marker was used to hide sensitive information. These days, it doesn't make sense to print out a document just to redact it. The process is slow, expensive, and inefficient. Instead, law firms, government agencies, and organizations around the world rely on Adobe Acrobat Pro software to safely and permanently remove content from the document data stream.

Acrobat redaction tools were introduced in version 8, and redaction capabilities have continued to improve with each release. In Acrobat X Pro, several new redaction features were introduced:

- Redaction across pages—Repeat a redaction through a document. Useful for redacting headers and footers from documents.

- Partial pattern redaction—Mark part of a pattern for redaction. For example, mark part of a national ID or credit card number. Useful for identifying individuals without revealing personal information.

- Redaction mark appearance—Set the appearance of redaction marks. For example, mark items with a transparent red overlay.

- Overlay text in Comments list—View overlay text in the Comment list for quick review.

This paper provides tips for getting started and best practices for using the redaction tools in Acrobat X. Topics covered include:
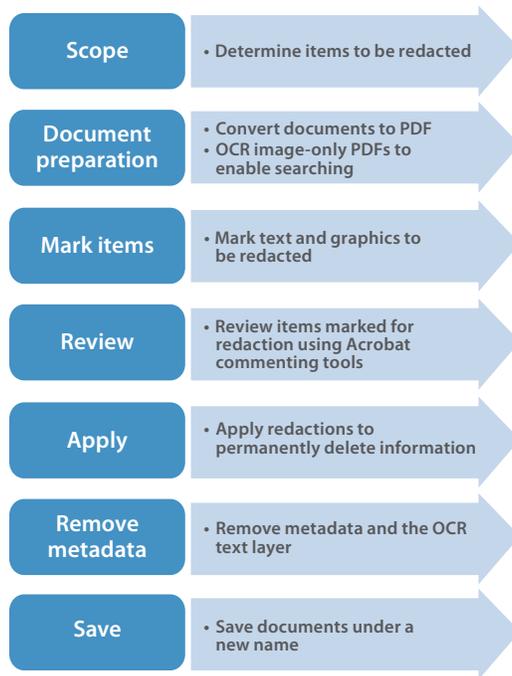
- Setting redaction preferences
- Marking text and graphics for redaction
- Setting common redaction properties
- Adding overlay text and exemption codes to a redaction
- Creating a report of redactions
- Applying redactions to permanently remove information
- Using Actions to automate the redaction workflow

Preparing for redaction

Redactions must be carefully applied and managed. Here are a few tips to get ready.

- Copy the documents to be redacted to a new folder on your hard drive.

- If the document is a scanned image, convert the image to searchable text using optical character recognition (OCR).

- Review the documents to identify the type of information that needs to be redacted. For example, personally identifiable information (PII), such as driver's license, national identification, or credit card numbers that can be used to identify, contact, or locate a person; names of companies or people that need to remain confidential; or trade secrets such as formulas or computer code.

The following diagram illustrates a suggested workflow for redaction.

Scope	• Determine items to be redacted
Document preparation	• Convert documents to PDF • OCR image-only PDFs to enable searching
Mark items	• Mark text and graphics to be redacted
Review	• Review items marked for redaction using Acrobat commenting tools
Apply	• Apply redactions to permanently delete information
Remove metadata	• Remove metadata and the OCR text layer
Save	• Save documents under a new name

Example redaction workflow

Automatically copying redacted text to a sticky note

A redaction mark acts like a comment until you apply the redaction, which then permanently removes the information. A best practice is to set your preferences to automatically copy text into a sticky note, which are compiled in the Comments pane. Using sticky notes makes it easier to review, edit, and delete what is marked for redaction.

1. Choose **Edit > Preferences** (Windows) or **Acrobat > Preferences** (Mac).

2. In the Categories list, click **Commenting**.

3. Select **Copy Selected Text into Highlight**, **Crossout**, and **Underline Comment Pop-ups**.

4. Click OK.

When you select text using the Mark for Redaction tool, the text is automatically copied into a sticky note and placed in the Comments list.


```
💬 ▾ john jacobs
12/25/2010 2:43:11 PM

4-29-68
```
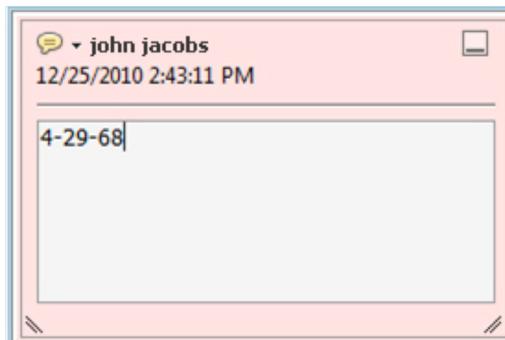
Redacting text and graphics

Use the Mark for Redaction tool to select text and graphics that will be removed from the document. The cursor changes depending on the type of content.
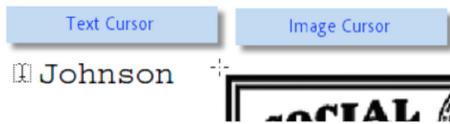
Note: Marking an item for redaction only flags the item for redaction. To finalize the redaction, you must apply it.

To select the redaction tool:

1. In the Tools panel, expand the Protection section.
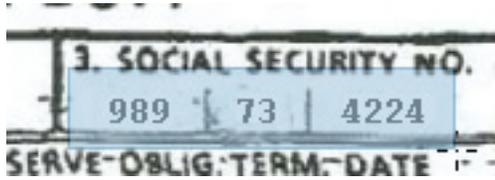
2. Select **Mark for Redaction**.
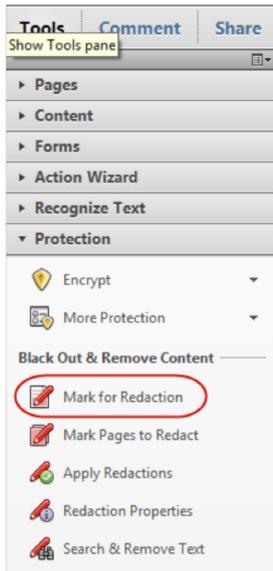
To redact text:

1. Select the **Mark for Redaction** tool.

2. Hover the cursor over the text that you want to redact. The cursor becomes a text selection cursor ($\mathbb{I}$).

3. Select the text to mark it for redaction.

> Tip: Did you select too much?
> Press Ctrl+Z (Windows) or Command+Z (Mac) to undo the redaction.

To redact a graphic or image:

1. Select the **Mark for Redaction** tool.

2. Hover the cursor over an image. When the crosshair cursor (+) appears, you can select the image.

3. Draw a rectangular selection around the area to redact. Everything within the selection area—images, text, and vector objects—is removed.

**Still can't get a crosshair cursor?**
Sometimes it is difficult to select an entire area that combines text and graphics. To get the crosshair cursor (+) for an area redaction, hold down the Alt (Windows) or Command (Mac) key.

Tip for redacting a photo
To select all the pixels in an image for redaction, double-click the image with the crosshair cursor (+).

To preview a redacted item:

1. Select the **Mark for Redaction** tool, if it is not already selected.

2. Hover over a redaction mark to preview it.

Preview with cursor over redacted object

Normal view shows redacted information
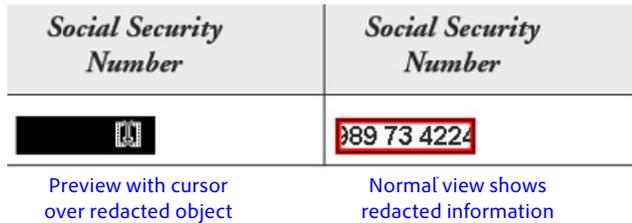
To delete a redaction mark:
1. With the Mark for Redaction tool, hover over the redaction mark and click to select it. You'll see subtle animation around the edges.

2. To delete the redaction, press the Delete key.

Changing the appearance of redactions

By default, redactions appear as solid black rectangles. You can change the appearance of redaction marks. For example, the image below shows different options.

| Redaction color	Overlay text	Text color and repeat
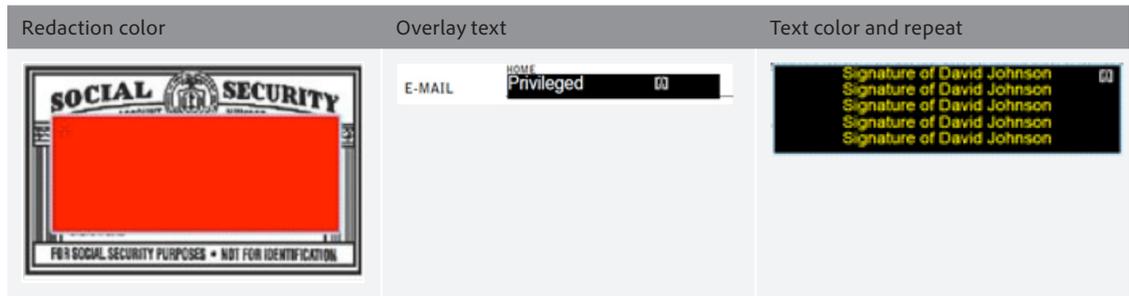
Examples of customizing the appearance of redactions

To change the appearance of a single redaction mark:

1. With the Mark for Redaction tool, hover over the redaction mark you want to change.

2. Right-click and choose **Properties**.
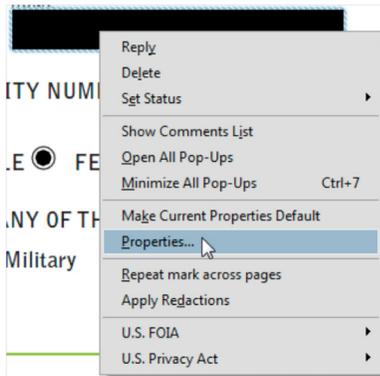
3. In the Redaction Properties window, select the changes that you want to make. The options are listed by letters in the screenshot below.
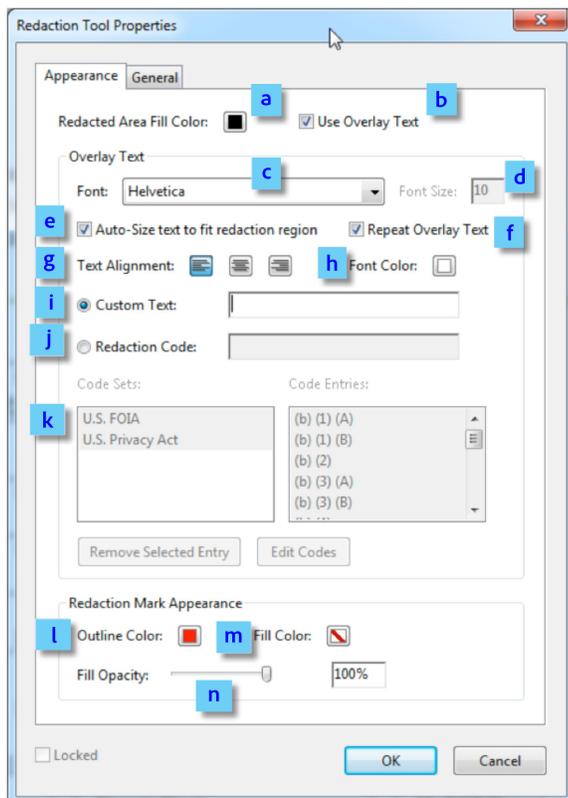
Redaction Tool Properties window

a. Choose the color of the redaction. You can also choose no color.
b. Select to have overlay text on top of the redaction.
c. Choose the font for the overlay text.
d. Set the font size for the overlay text.
e. Select Auto-Size Text to make the text fit the width of the redacted area.
f. Select to repeat the text over the redacted area.
g. Choose how to align the overlay text: left justified, centered, or right justified.
h. Specify the font color of the overlay text.
i. Select to enable custom text. Type the text to appear on top of the redaction.
j. Select to apply an exemption code. Exemption codes are listed in the box. You cannot change the information in this field.
k. Select a redaction code, if applicable. Redaction codes are pre-defined sets of text used to denote the reason or statute under which the redaction was made. Acrobat Pro includes two prepopulated sets— U.S. FOIA (Freedom of Information Act) and U.S. Privacy Act. You can also create and save your own sets.
l. Set the outline color for the redaction mark. This affects the appearance of the marked item only, not the final appearance of the redaction.
m. Set the fill color for the redaction mark. This affects the appearance of the marked item only, not the final appearance of the redaction.
n. Set the opacity of the redaction mark. This affects the appearance of the marked item only, not the final appearance of the redaction.

To change the default appearance of all redaction marks:

1. With the Mark for Redaction tool, select an item for redaction.

2. Right-click and choose **Properties**.

3. Specify the appearance of the redaction mark and click **OK**.

4. Right-click the redacted item and choose **Make Current Properties Default**.

> **Frequently need to change the color of redaction marks?**
> Use the Properties bar instead. To open the Properties bar, press Ctrl+E (Windows) or Command+E (Mac). Select a redaction mark and change its color.

Deleting or changing multiple redaction marks simultaneously

The Acrobat Comments panel contains a list view of all redaction marks in the document. From there, you can delete or change the properties of multiple redaction marks at one time.

1. Click the Comment panel and expand the Comments List section.

2. Do one of the following:

-   To select non-contiguous comments, hold down the Control key (Windows) or Command key (Mac) and click the comments you want to remove or change.
-   To select all comments in the list or comments next to each other, select the first comment, and then while pressing the Shift key, select the last comment you want to remove or change.
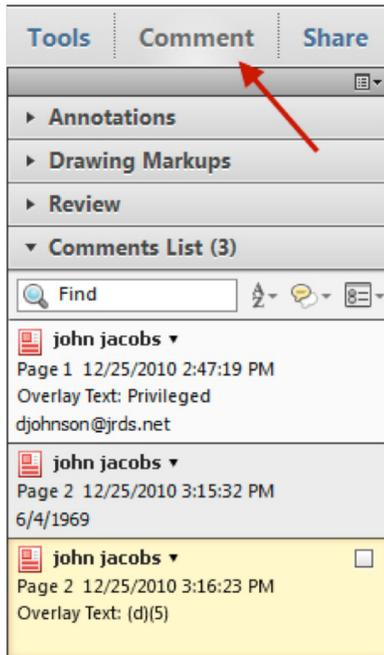
3. To delete the comments, press the Delete key.

4. To change the properties of the selected comments, right-click and choose **Properties**.

Searching for text to redact

The Search and Remove Text feature allows you to search for single or multiple text strings and patterns, such as national ID numbers, within a single document or across multiple documents.

To search and redact text:

1. In the Tools panel, expand the Protection section.

2. Select **Search & Remove Text**.

3. For where to search, select the current document or browse to a folder of files to perform a cross-document search.

4. Select what you want to search for. If you choose **Multiple Words or Phrase**, the Words and Phrases to Search and Redact dialog box opens. Enter each word to search for and click **Add** or click **Import** to import a list of words.

5. Click **Search and Redact**. When the search is complete, the results appear.

6. To view where a result appears in the document, click the result.

7. Select the results you want to mark for redaction. To mark all the results, click **Check All**.

8. Click **Mark Checked Results for Redaction**.

Using pattern-based search

You can search for particular patterns to find information, such as phone numbers, national ID numbers, email addresses, and dates. To create custom patterns, see the section, "Creating custom redaction patterns."

To search for information using a pattern:

1. In the Tools panel, expand the Protection section.

2. Select **Search & Remove Text**.

3. For where to search, select the current document or browse to a folder of files to perform a cross-document search.

4. Under Search For, choose **Patterns**.

5. Select the pattern you want to find.

6. Click **Search and Redact**. The Search dialog box opens.

7. To perform a new search, click **New Search**.

8. To save the search to a PDF or CSV file, click the file icon.

9. To view where a result appears in the document, click the result.

10. Choose whether you want to mark whole or partial words. For partial word redaction, click **Settings**.

11. Select the results you want to mark for redaction. To mark all the results, click **Check All**.

12. Click **Mark Checked Results for Redaction**.

Reviewing redactions

It's important to review each page of your document, especially scanned documents. You can use the following familiar commenting and annotation Acrobat features to manage redactions:

- Add notes and comments to redacted items and send them to another Acrobat user to review, reply to, or change.

- Summarize comments and notes attached to redacted items as part of a review or archival workflow.

- Approve, reject, or delete items to be redacted using the Comments list.

- Participate in a Shared Review workflow, which allows you and your colleagues to use Acrobat X Pro to collaboratively redact documents.

To add a note or comment to an item marked for redaction, do one of the following:
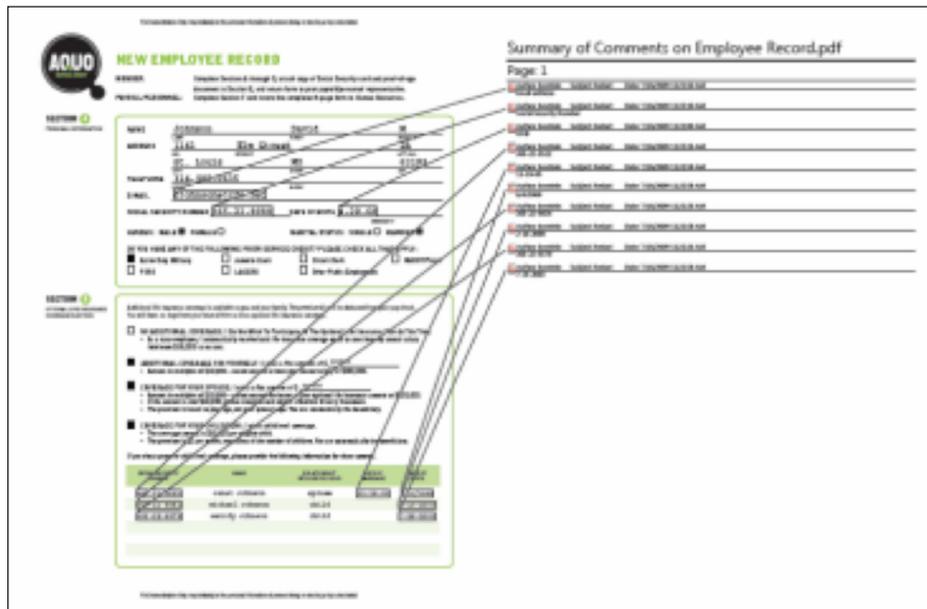
- Right-click the item and choose **Open Pop-up Note**.

- Double-click the item.

To view the Comment list:

- Click the Comments panel and expand the Comments List section.

Creating a redaction summary

You can consolidate the comments of redacted documents in a single PDF file. Redaction annotations are displayed as callouts on the document.
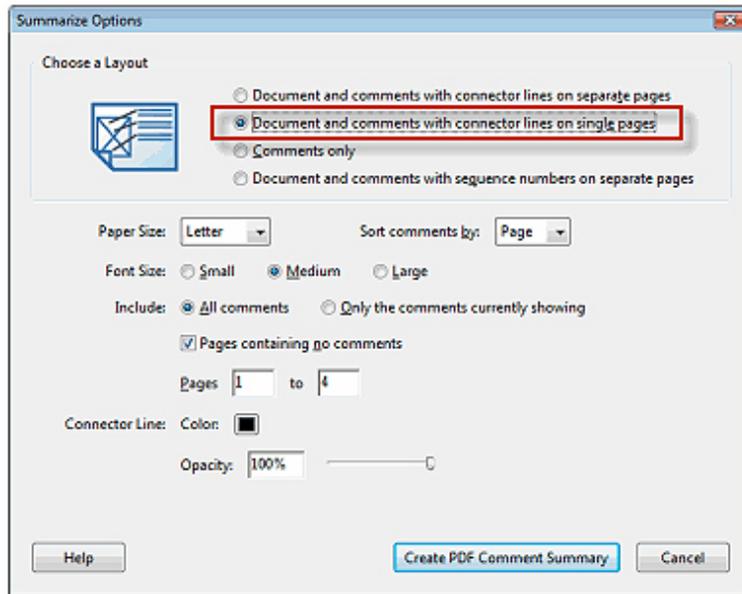

To create a summary:

1. Open the document containing your redaction marks. You must run this step before you apply the redactions.

2. Click the Comments panel and expand the Comments List section.

3. In the upper right corner of the Comments List, click the Options icon and choose **Create Comment Summary**.
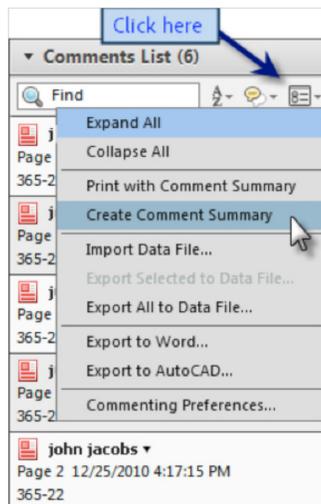
4. In the Summarize Options dialog box, choose a layout option.

5. Click the **Create PDF Comment Summary** button.

Acrobat creates a PDF file that summarizes the redaction marks using the layout that you selected.

Applying redactions

You must apply a redaction to permanently remove the information from the document. All graphic objects such as text, raster images, or vector images that are fully covered by a redaction mark are completely removed from the document. All graphic objects that are partially covered by a redaction mark are modified so that only the covered area is removed. Any information associated with the graphic objects is also removed. After the redactions are applied, Acrobat prompts you to save the PDF document as a new file and will only include valid objects. This method prevents removed objects from being viewed or recovered in the future.

To apply redactions:

1. In the Tools panel, expand the Protection section.

2. Select **Apply Redactions**.

3. In the warning window, click **OK** if you want to remove the information.
    The redactions are applied.

4. In the message prompting you to examine the document for additional information, click **Yes**. This action finds hidden information, such as metadata, text, and comments, that could lead to an accidental disclosure.

5. Review the results and then click **Remove**.
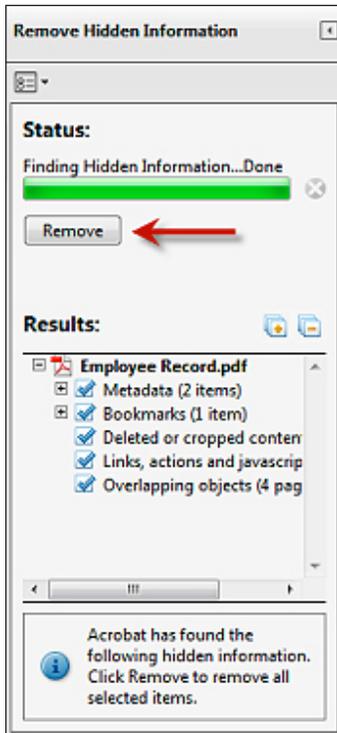
6. Choose File > Save. Acrobat renames your file automatically when you save it.
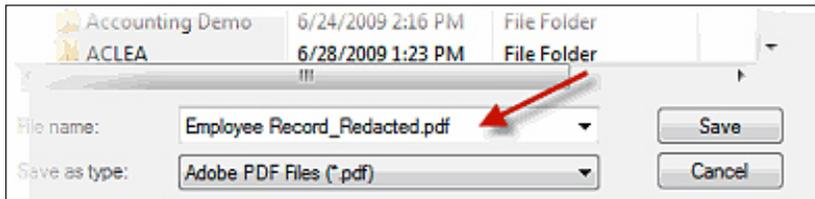
Automating Redaction Workflows Using Actions

You can use guided Actions in Acrobat X to automate many of the steps in the redaction process. With guided Actions, users are automatically taken through each step and prompted as appropriate, ensuring process consistency and minimizing the user's learning curve for Acrobat. For example, you can have an Action that performs the following steps:

1. Prompts you to locate the documents to redact.

2. Converts them to PDF (for supported file types like Word or Excel).

3. Performs OCR on the document, if needed.

4. Prompts you to redact the document.

5. Applies the redactions.

6. Removes hidden information and metadata.

7. Reduces the file size of the document.

8. Changes the file to an Acrobat 5 level file (PDF 1.4), which is compatible with court filing systems.

9. Renames the file with the _redacted.pdf suffix.

10. Saves the redacted documents in a folder of your choosing.

Download the above example action along with instructions (Redaction_Action.pdf).
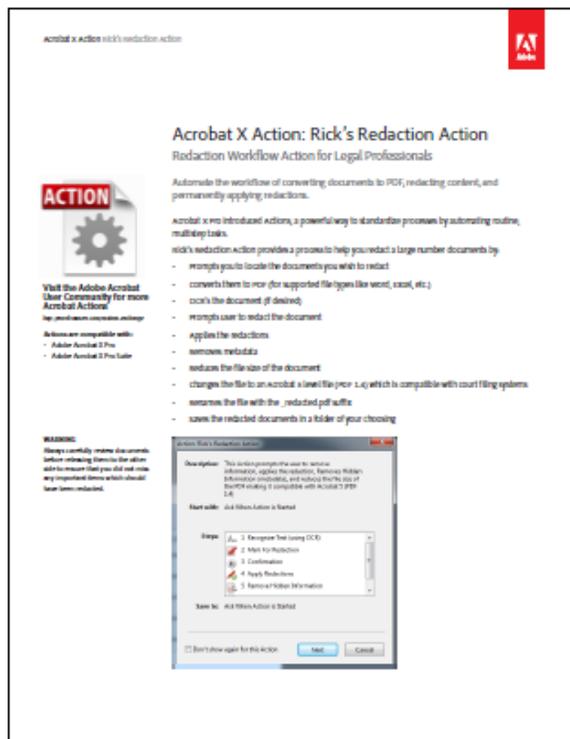
Redaction_Action.pdf (674K)

You will need Acrobat X Pro to run the Action.

PDF file includes:

- Installation information
- Embedded Action
- Instructions on how to use the Action
- Customizing information

Tips and tricks for advanced users

Creating custom redaction patterns

Acrobat uses regular expressions—often abbreviated as REGEX—to find patterns. A regular expression is a code pattern that describes the attributes of the text that you want to find. For instance, if you need to find uniquely patterned account numbers, you can use a REGEX to find the pattern and mark all account numbers across many documents. For example, for the pattern of three alphabetic characters followed by three digits, the REGEX is \D\D\D\d\d\d. This pattern would find ABC123, but not 123ABC or A12345.

Several third-party tools are available for building regular expressions. For example, RegexBuddy (www.regexbuddy.com) is a Windows-based application for creating and testing regular expressions. It also comes with a library of prebuilt expressions for various patterns, such as postal codes, national IDs, and VAT country codes.

After you have created and tested a regular expression, you can add it to Acrobat.

Acrobat pattern files

Acrobat stores redaction patterns in an XML file called SearchRedactPatterns.xml. You can edit the file in a text editor like Notepad (Windows) or TextEdit (Mac). Before making changes, make a copy of the file. You can use existing patterns as a template. Copy the text you want to modify and place it at the end of the file, and then make the changes to create a new pattern.

> **Tip:** It's easier to edit the XML file in an application that understands tags, such as Adobe Dreamweaver® or Microsoft Word.

Creating a new pattern

To create a new pattern:

1. Quit Acrobat if it is open.

2. Find the search pattern file:

   - (Windows XP)
     \Documents and Settings\<username>\Application Data\Adobe\Acrobat\10.0\Preferences\ Redaction\<locale>\ SearchRedactPatterns.xml

   - (Windows 7 and Vista)
     \Users\<username>\AppData\Roaming\Adobe\Acrobat\10.0\Preferences\Redaction\<locale>\ SearchRedactPatterns.xml

   - (Mac Intel)
     /Users/<username>/Library/Preferences/Adobe/Acrobat/10.0/ Redaction/<locale>/ SearchRedactPatterns.xml

   > **Can't see the file on Windows?**
   > 1. In the Control Panel, choose **Folder Options**.
   > 2. Click the **View** tab.
   > 3. Double-click **Hidden Files and Folders**.
   > 4. Enable **Show hidden files and folders**.

3. Make a backup copy of the SearchRedactPatterns.xml file.

4. Open SearchRedactPatterns.xml in a text editor.

5. Locate a pattern to modify. This example uses Entry4.

```
<set name="Entry4">
<str name="displayName">
<val>Email Addresses</val>
</str>
<str name="regEx" translate="no">
<val>([a-zA-Z0-9_])([a-zA-Z0-9_\-\.])*@([a-zA-Z\-])+\.([a-zA-Z\.]+)</val>
</str>
<str name="examples">
<val>This pattern will search for email addresses.

For example:
John.Doe@acme.com
John_Doe_1234@acme.gov
j-doe@marketing.acme.net</val>
</str>
</set>
```

6. Copy the block of text and place it just before the last tag in the file: </asf>.

7. Edit the block.

    a.   Give the block a unique entry number.

    b.   Change the display name. This name appears in Acrobat.

    c.   Edit the pattern.

    d.   (Optional) Provide a description and examples. Although this is optional, it is helpful for other users.

```
<set name="Entry4">  step 7a
<str name="displayName">
<val>Email Addresses</val>  step 7b
</str>
<str name="regEx" translate="no">
<val>([a-zA-Z0-9_])([a-zA-Z0-9_\-\.])*@([a-zA-Z\-
])+\.([a-zA-Z\.]+)</val>  step 7c
</str>
<str name="examples">
<val>This pattern will search for email addresses.
                                          step 7d
For example:
John.Doe@acme.com
John_Doe_1234@acme.gov
j-doe@marketing.acme.net</val>
</str>
</set>
```

> **Careful!** Do not delete any quotes (" ") or brackets (< >).
> Only fill in between the opening <val> and closing <\val> tags.

For example, a new Entry 6 for Canadian Social Insurance numbers looks like this:

```
<set name="Entry6">
<str name="displayName">
<val>Canadian Social Insurance Number</val>
</str>
<str name="regEx" translate="no">
<val>(\b)((\d{3}(-|\s|\.|_)\d{3}(-|\s|\.|_)\d{3})|(\d{9}))(\b)</val>
</str>
<str name="examples">
<val>This pattern will search for 9-digit Canadian Social Insurance numbers, either consecutive or 3 digits plus 3 digits plus 3 digits
(separated by punctuation marks).

For example:
123-456-789
123456789</val>
</str>
</set>
```

8. Save the file.

9. Restart Acrobat.

10. Choose View > Toolbars > Redaction and then click the Search and Redact button.
   The new pattern should be in the list.

I edited the file, but the patterns aren't there!
Make sure that you edited the file in the Preferences folder.
There is an identical file one level up that is easy to grab by mistake.

Adding overlay text and exemption codes to a redaction mark

Overlay text appears on top of a redaction mark and remains present after redactions are applied. The overlay text is useful for government agencies that are required to make documents public or to place a code or other mark on top of the redaction to meet agency guidelines.
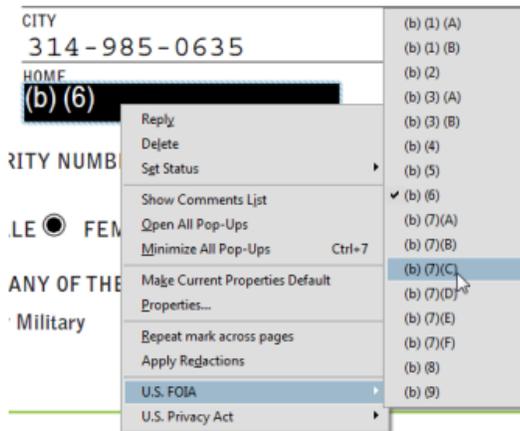
To add overlay text to a redaction mark:

1. Create a redaction mark.

2. Right-click the redaction mark and choose **Properties**.

3. Select Use **Overlay Text**.

4. In the **Custom Text** field, type the overlay text.

5. Click **OK**.
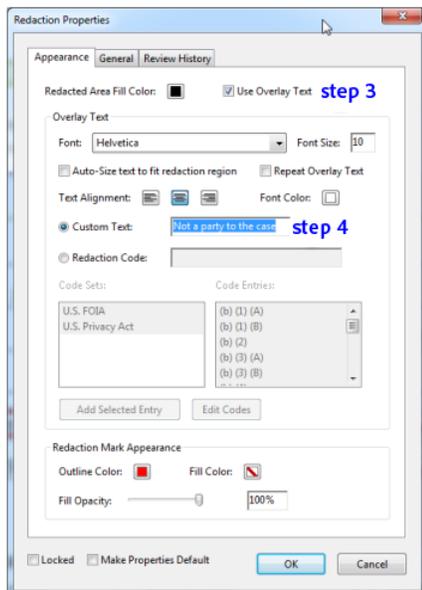
To add an exemption code to a redaction mark:

1. Create a redaction mark.
2. Right-click the redaction mark and choose the appropriate custom exemption code that appears in the menu and the appropriate code.
3. Repeat for as many exemption codes as needed per redaction.

Creating custom exemption code sets

You can create custom exemption codes to add to a redaction mark.

1. Create a redaction mark.
2. Right-click the redaction mark and choose **Properties**.
3. Click the **Edit Codes** button.
4. Click the **Add Set** button.
5. Change the name of the set in the entry field, and click the **Rename Set** button.
6. Click the **Add Code** button.
7. Change the name of the code in the entry field, and click the **Rename Code** button.
8. Repeat step 7 for as many codes as needed.
9. Click **OK** when you are finished.

Best practices summary

Keep in the mind the following when taking on projects that require redaction.

- **Do not forget to apply redactions!** Simply marking text and graphics does not actually remove it.
- Streamline the redaction process using Acrobat X Actions. You can use Actions to do the following:
    - Prompt users to manually redact pages
    - Perform Word List redaction
    - Apply redactions

- Carefully review scanned documents because OCR is not a foolproof process. The Search and Redact feature finds text only in searchable documents.
- Review all documents prior to submission. A two-person review team catches many more errors than a single person.
- Know your court rules and judge's orders regarding redaction. Ask the clerk of the court for clarification if you need more information.
- Don't skip the examine document step. Inexperienced users might only cover up information in electronic sources and mistakenly believe it is redacted. The Examine Document feature can detect and fix these issues.