



Guidelines for PDF Creation from Office Applications

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1 INTRODUCTION

The Ghent PDF Workgroup (GWG) creates and maintains specifications for the exchange of print ready PDF between document Creators and Producers.

In order to make the workflow as predictable as possible, the enclosed guidelines for the creation of PDFs from Microsoft Office applications in a Microsoft Windows environment have been created and tested by the Office Printing committee of the GWG Workgroup. If there are any unclear points, please check with your print service provider.

For print service providers there will be a separate document called: Processing Office PDF guidelines. If more information about the background of the Office Printing best practices is required, please check out the GWG Office Printing White Paper at www.gwg.org.

The Office Printing PDF Creator guidelines encompass:

1. Document features to watch out for.
2. What tools can be used to create PDF?
3. Which settings should be used in the selected tool?

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2 Document Areas

2.1 Image Quality & Colour

For production printing purposes the quality of images and the colour rendering is commonly different than what is used for printing to local devices directly from the desktop. Although the colour specification is similar (sRGB), local printing devices have been optimized for Microsoft Office documents and most production printing devices have been optimized for other professional document creation tools.

The pictures and illustrations used in Microsoft Office applications should be of high quality with respect to resolution and colour reproduction.

Images (whether photographs, screen shots, company logos, etc.) copied from websites commonly have an image resolution adapted to computer monitors and most likely do not contain ICC profiles that aid in faithful colour reproduction. These are of poor quality for printing and should not be used. The recommended image resolution is > 150 pixels per inch. Images from a 2 MB camera are +/- 1600 x 1200 dots divided by 150 ppi give usable +/- 10.5 x 8 inch pictures in a document. Scanned text need to be 600 dpi without enlargement. Photographs should hopefully contain the original ICC profile used by the camera that took the photo. In the case of screen shots, profiles are quite uncommon but as Microsoft Windows uses sRGB for all objects onscreen, such a profile can always be added in after the fact or assumed at a later stage of the process.

2.2 Fonts

There are three major font formats in use today – Type 1 (also known as Postscript or PS Fonts), TrueType (.ttf), and OpenType (.otf). OpenType fonts, as an amalgam of the other two formats, come in two different flavours depending on which of the other format it is derived from. When this document refers to OpenType fonts, it means any type of OpenType while OpenType-CFF (OTF-CFF) will mean Type 1-based OpenType and OpenType-TTF (OTF-TTF) will mean TrueType-based OpenType.

When creating PDFs from Office documents, one of the biggest areas of concern is whether the font can be properly embedded in the PDF to ensure proper reproduction of the content at a future date. In addition, you want to ensure that the text can be searched and indexed to aid in discovery.

2.3 Transparency

Authoring tools such recent versions of Microsoft Office provide users the ability to have objects on their pages that are not completely opaque – such that anything underneath them can be seen (at least in part). This functionality, called transparency, is most commonly used with images (via the magic wand tool) when you want to have only the coloured pixels show and anything “white” (or background) be invisible. Another common use is when drop shadows are added to objects to give them some depth. Also, with Office 2007 many of the standard Shapes, SmartArt, WordArt and Charts include transparency as well.

It is important that this transparency be either copied natively into the PDF or that a valid “flattening” of the transparency takes place that maintains the high quality nature of all of the text and image content on the page.

3 PDF CREATION TOOLS FOR MS OFFICE

There are several ways to create a PDF document from within Microsoft Office applications like Word, Excel, or PowerPoint. Each of the methods has its own advantages and disadvantages which the following sections detail for both of the major versions of Microsoft Office in use today.

3.1 Microsoft Office 2003

MS Office 2003 does not include a native PDF export function neither in the box nor as an available add-on from Microsoft. To create a PDF from this version of Office, a separate application is required.

Below you will find a table of possibilities and pitfalls for the different methods when creating PDFs from Office 2007.

PDF Creation Application	font handling	Transparency	image resolution
Acrobat 7.0, 8.0 & 9.0 via PDF Maker	TTF, OTF, PS	See Note 1	resolution >450 to 300
Adobe PDF Printer	TTF, OTF, PS	See Note 2	resolution >450 to 300
Global Graphics Jaws PDF Creator version 4.1	TTF, OTF, PS	See Note 2	resolution >450 to 300
Other applications that work via printing	TTF See Note 3	See Note 2	display resolution

Note 1 In order to ensure that transparency is preserved from Office, the JobOptions settings need to be creating a PDF of version 1.4 or later. In addition, inside the PDFMaker settings, the "Tag this document for Accessibility" option needs to be enabled.

Note 2 When printing to PDF creation solutions via the Windows PostScript printer driver, Microsoft Office applications perform a simulation of transparency before submitting the job to the printer driver. The newly created page, containing the simulated transparency, is then recorded into the PDF that's created from the PostScript stream. Be aware that transparency simulation is not of the same thing as transparency flattening, as used by Adobe's Creative Suite products.

Note 3 Many low cost PDF creation tools do not support the embedding of fonts into the PDF. As mentioned in section 2.2, it is a necessity for reliable viewing and printing that all fonts be embedded.



3.2 Microsoft Office 2007

Below you will find a table of possibilities and pitfalls for the different methods when creating PDFs from Office 2007.

PDF Creation Application	font handling	Transparency	image resolution
Office 2007 Export to PDF	TTF, OTF-TTF See Note 1	OK	image resolution unchanged
Acrobat 8.1 & 9.0 via PDF Maker	TTF, OTF, PS	OK	resolution >450 to 300
Adobe PDF Printer	TTF, OTF, PS	See Note 2	resolution >450 to 300
Global Graphics Jaws PDF Creator version 4.1	TTF, OTF, PS	See Note 2	resolution >450 to 300
Other applications that work via printing	TTF See Note 3	See Note 2	display resolution
Office 2007 Export to XPS (PDF via Acrobat)	TTF, OTF-TTF See Note 1	OK	all res. back to 150

Note 1 Microsoft's PDF and XPS export do not support Type 1 or OpenType-CFF based fonts natively. As such, it converts any text using those fonts into bitmapped representations (aka images!) that are no longer searchable and look quite poor. With white text on a black background this text disappears.

Note 2 When printing to PDF creation solutions via the Windows PostScript printer driver, Microsoft Office applications perform a simulation of transparency before submitting the job to the printer driver. The newly created page, containing the simulated transparency, is then recorded into the PDF that's created from the PostScript stream. Be aware that transparency simulation is not of the same thing as transparency flattening, as used by Adobe's Creative Suite products.

Note 3 Many low cost PDF creation tools do not support the embedding of fonts into the PDF. As mentioned in section 2.2, it is a necessity for reliable viewing and printing that all fonts be embedded.



4 Recommendations

When choosing the fonts to use for your document, the most reliable choice is to use TrueType fonts (or TrueType-based OpenType fonts), such as those that are included with Windows itself, since they are supported by all PDF creation applications. If you know that your creation application fully supports other font types, then their use is perfectly fine and in many cases preferred. Just remember to ensure you have chosen an application that embeds the fonts!

It is highly recommend that the actual creation of the PDF be done by the author. Opening Microsoft Office created documents on PC's that have different fonts or printer (drivers) active can result in undesired reformatting of document. It may not simply be different fonts or printer (drivers), but even different versions of the same font/driver can cause unwanted document reformatting.

If you are going to be producing the PDF using one of the options presented in Section 6, it is important that you have that printer selected while authoring. This will prevent any possibility of reflow or repagination when switching to that printer at actual PDF production time.

5 PDF creation from MS Office

All of the tools listed in this section have been tested and approved for use by the GWG, provided you do so using the methods and settings recommended below. We do not recommend any one over the others; just select the software tool that best fits your circumstances.

5.1 Microsoft Office 2007 PDF Export

5.1.1 Installation

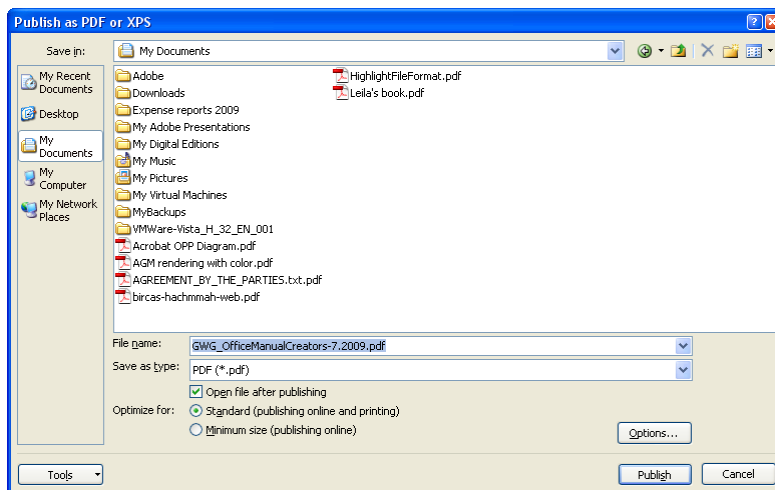
MS Office 2007 SP2 includes this functionality natively, but the initial version of Office 2007 as well as SP 1 users will either need to download and install the plugin separately or simply upgrade to SP2. We recommend upgrading directly to SP2 to obtain the latest version of the plugin as well as the various fixes for Office itself.

5.1.2 Use

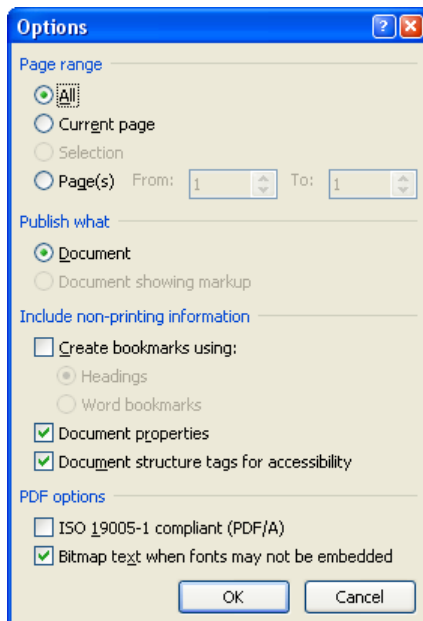
To save an Office document to PDF, click on the large round Microsoft Office logo button in the top left-hand corner of the application's window, select *Save As* and then choose *PDF or XPS*.



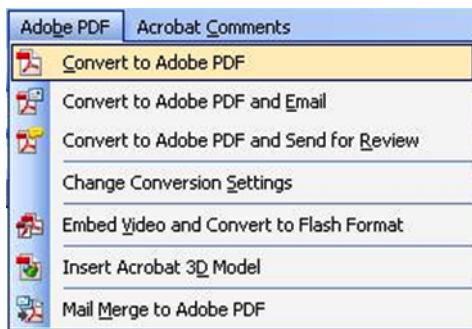
You will then be able to choose where to place the PDF and what to name it via a standard "Save As" dialog. Be sure that the "Save as Type:" is set to PDF and not to XPS.



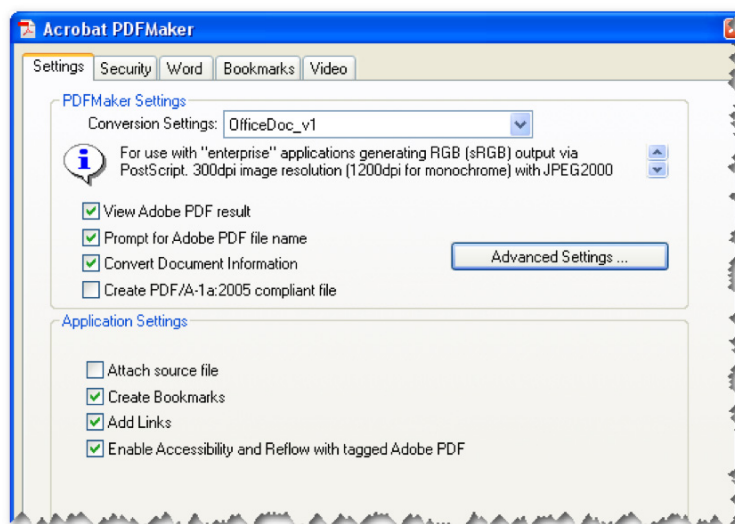
Clicking the **Options** button will allow you to choose which pages from the document to export and whether to have additional metadata or PDF structures (such as bookmarks and links) exported when creating the PDF. In addition, you can choose to export the file in a way compliant with ISO 19005-1 (PDF/A-1). This option is recommended when you know the document does not contain any transparency as it will produce a higher quality and more reliable document than the normal methods. However, as PDF/A-1 does not support transparency, all of your content will be converted to 100% opaque which will change the look of your document and potentially hide important information.



NOTE Adobe recommends that users of Office 2003 are running Acrobat 9.0 or later as it offers a variety of improvements with that environment over the earlier 6.0.1, 7.0 and 8.0 releases.

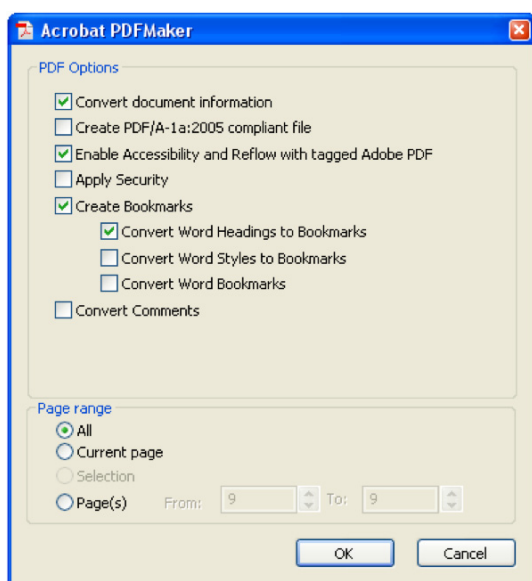


Before you can create your first PDF, we need to ensure that the settings are correct. Click on '**Change Conversion Settings**' and then make sure that your preferences match those in the dialog shown below. Most important is the "Conversion Setting" being the newly installed OfficeDoc_v1.



To create a PDF, just click **Convert to Adobe PDF**. You will then be presented with a standard "Save As" dialog where you name and place it where you'd like. Clicking on the **Options** button will allow you to change some of the settings that you set up above on a document-by-document basis.

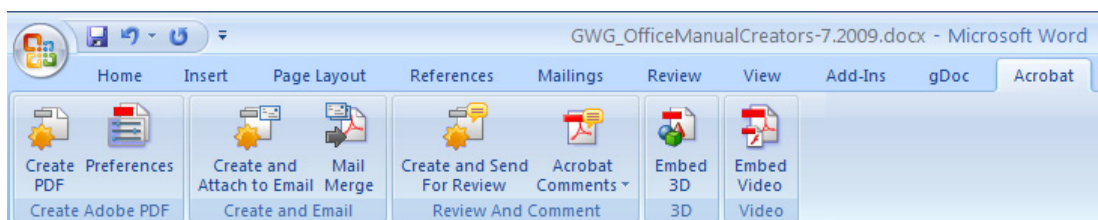
In addition, you can choose to export the file in a way compliant with ISO 19005-1 (PDF/A-1). This option is recommend when you know the document does not contain any transparency as it will produce a higher quality and more reliable document than the normal methods. However, as PDF/A-1 does not support live transparency that aspect of your content will be flattened, so that it looks correct but is no longer actually transparent.



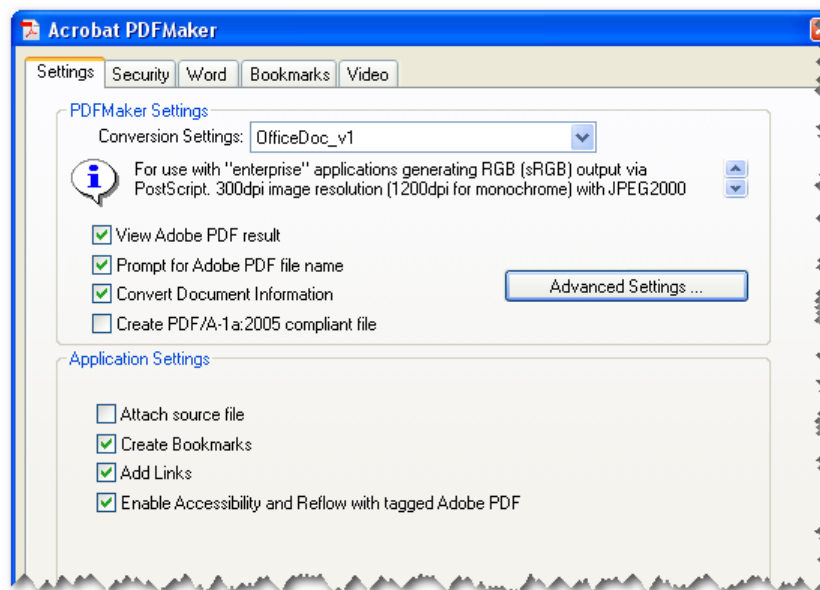
5.2.3 PDFMaker for Office 2007

Acrobat 8.1 and later will install a new ribbon bar into MS Office 2007 with adds a variety of PDF-related features to office, not the least of which is simply the ability to create a PDF. That is the feature we will focus on here, but it is recommended that you read the product's documentation or help files for information about the other options in the bar.

NOTE Adobe recommends that users of Office 2007 are running Acrobat 9.0 or later as it offers a variety of improvements with that environment over the earlier 8.1 release.

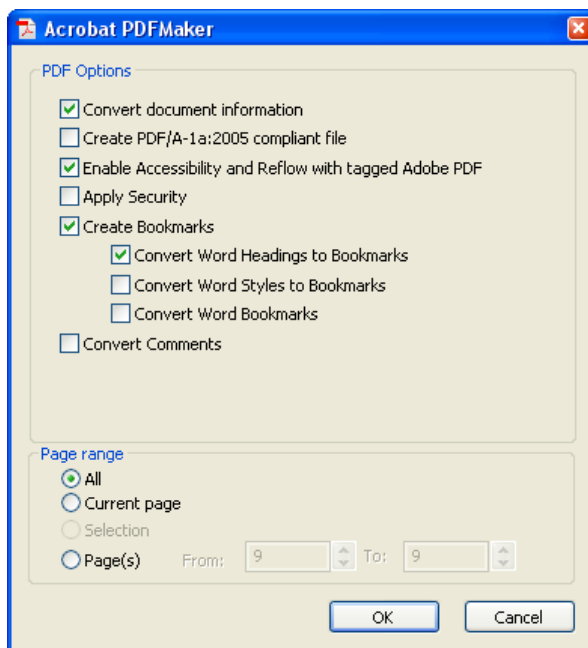


Before you can create your first PDF, we need to ensure that the settings are correct. Click on **Preferences** and then make sure that your preferences match those in the dialog shown below. Most important is the "Conversion Setting" being the newly installed OfficeDoc_v1.



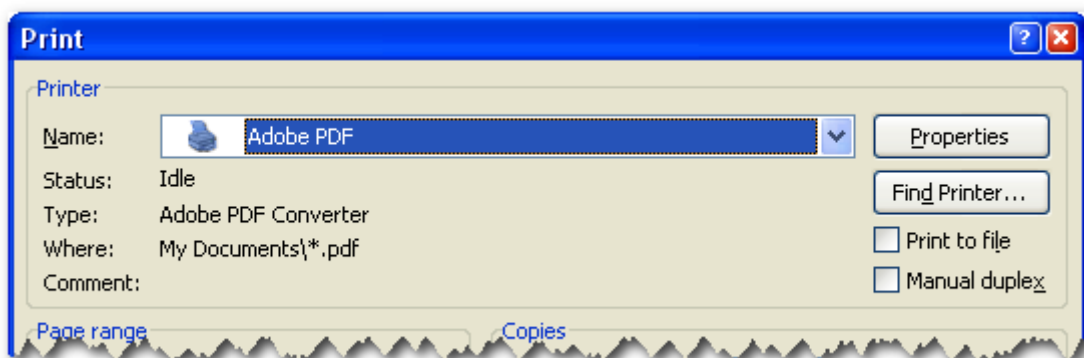
To create a PDF, just click **Create PDF**. You will then be presented with a standard “Save As” dialog where you name and place it where you’d like. Clicking on the **Options** button will allow you to change some of the settings that you set up above on a document-by-document basis.

In addition, you can choose to export the file in a way compliant with ISO 19005-1 (PDF/A-1). This option is recommend when you know the document does not contain any transparency as it will produce a higher quality and more reliable document than the normal methods. However, as PDF/A-1 does not support live transparency that aspect of your content will be flattened, so that it looks correct but is no longer actually transparent.



6 Creation of PDFs from other applications

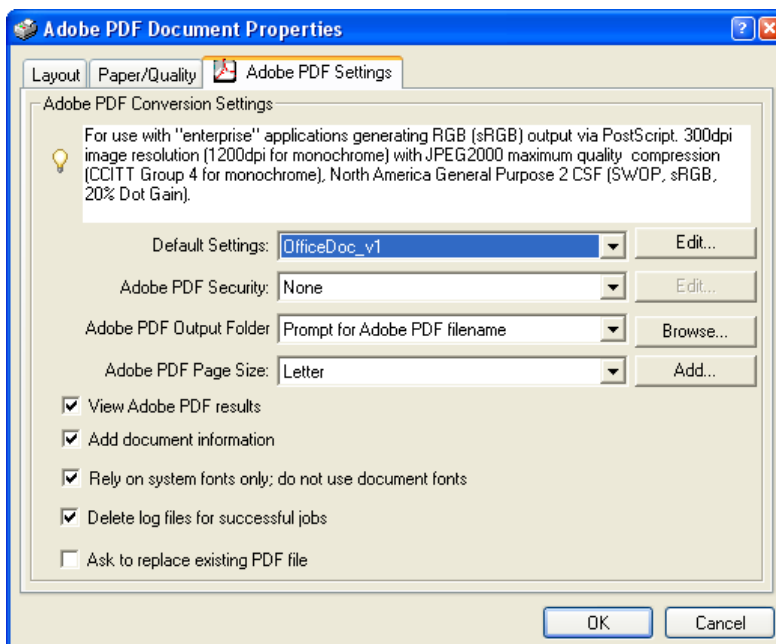
When creating PDFs from other applications, the only method available is likely to be via the Print command in the File menu. After you've done so, you simply need to choose the printer that corresponds to the application you've installed for PDF creation. For example, in the image below, the Adobe PDF printer (which comes with Adobe Acrobat) is selected. For gDoc Fusion, you'd select gDoc PDF Creator and others have their own names as documented below.



6.1 Using Acrobat Distiller

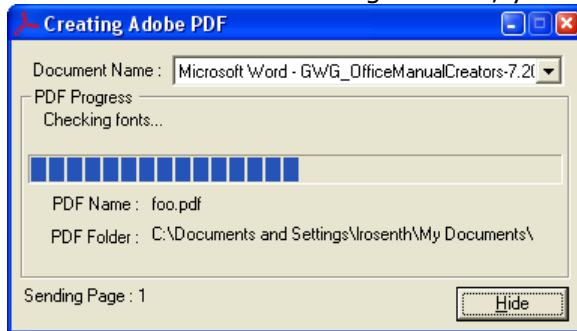
If you haven't already done so, follow the instructions in Section 5.2.1 to install the GWG OfficeDoc_v1 settings.

After selecting "Adobe PDF" from the Print dialog, you will need to click **Properties** to ensure that the settings are correct. Most importantly, make sure that the "Default Settings" is set for "OfficeDoc_v1".





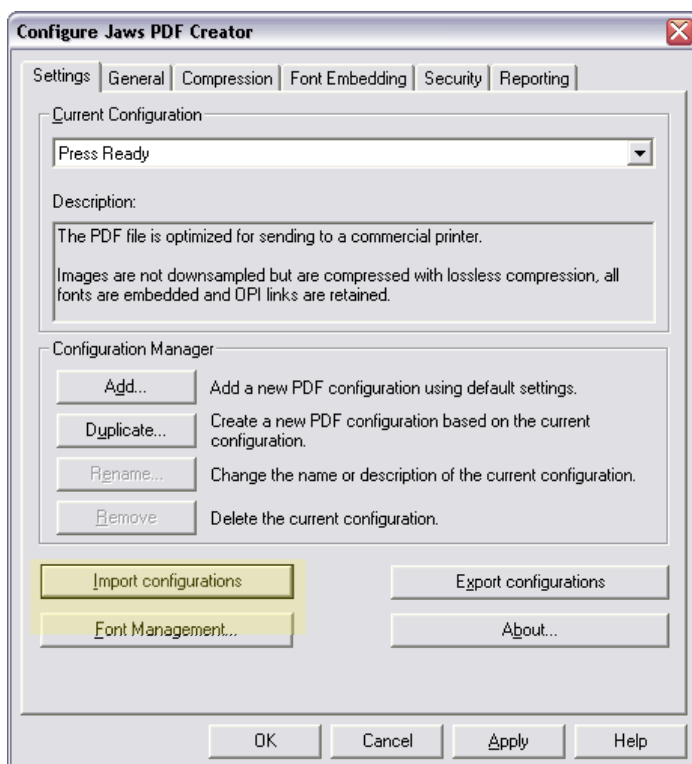
After you click **OK** to this dialog, go ahead and click **OK** to begin the process of creating the PDF file. You can then name and locate your PDF using the standard 'Save As' dialog box. While the PDF is being created, you'll see a progress indicator such as this one.



6.2 Using Jaws Creator

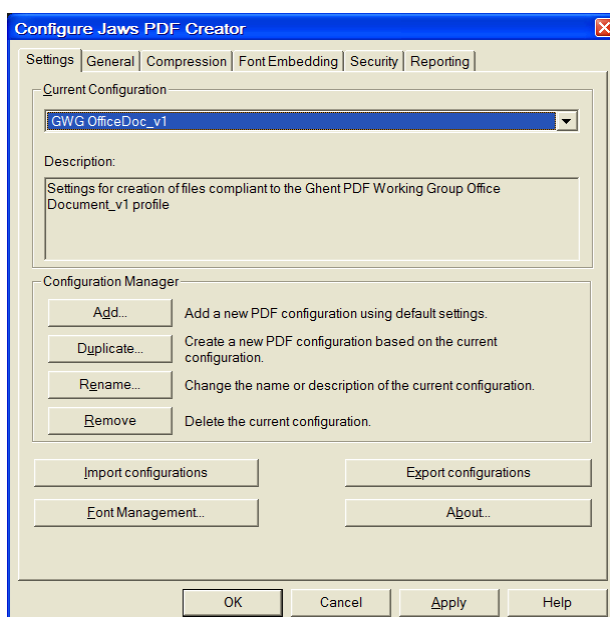
In order to import PDF Creator settings, open the PDF Creator Control Panel applet and use the Import Configurations button.

Import the OfficDoc_v1.xml configuration file.

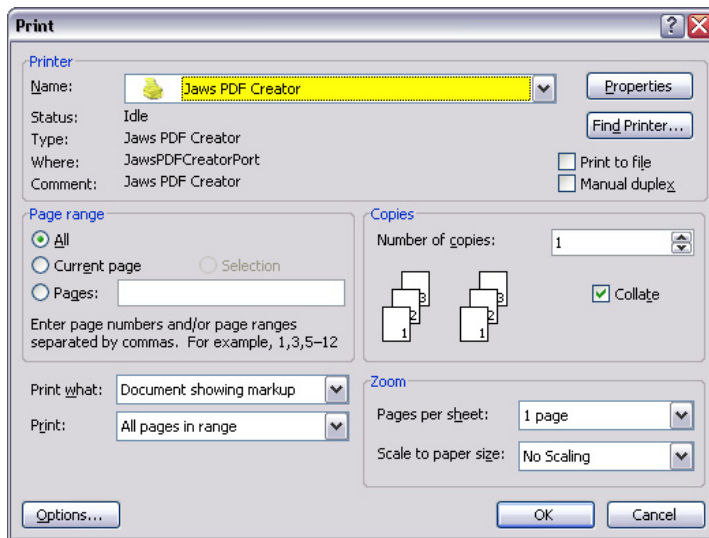


In order to import PDF Creator settings, open the PDF Creator Control Panel applet and use the Import Configurations button.

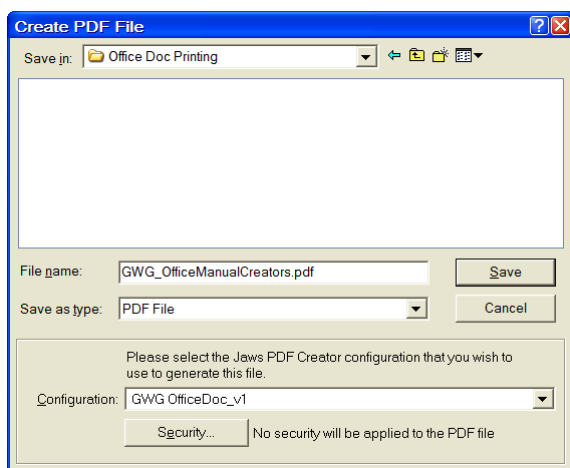
Import the OfficDoc_v1 configuration file.



After installing the configuration file, you will see this screen.



In an Microsoft Office 2007 application such as Word, bring up the Print menu (Ctrl+P). Select Jaws PDF Creator as the printer. Click OK.



When the Create PDF File dialog box appears, select GWG OfficeDocs_v1 as the configuration. Click OK



7 Processing PDF

The PDF's produced with the settings in Section 5 of this document are similar to an ISO PDF/X-3 or PDF/A-1 print ready PDF. These PDF documents have to be treated as such. For details see the GWG Office Producer Guidelines document at www.gwg.org.