HOW TO SETUP A PDF PRINTER FOR WINDOWS WITH AUTOMATICALLY CHOSEN FILENAME

by Lorenzo Monti (2009)

http://www.lorenzomonti.it/

1. Introduction

Two years ago, I received a request by a customer of mine, asking for a program able to create PDFs out of the invoices from his ERP. We had a batch procedure for invoice printing and a proprietary PDF printer driver. The only way to go was to connect the PDF driver to the FILE: port, but then the user would have been forced to input a name for each file. We were talking about hundreds of files at a time. After some investigating, I decided to solve this problem writing a port monitor able to decide the file name for me. I named it Mfilemon (Multi File Port Monitor) and gave it to the public domain, under the GPL license.

This document will guide you through the process of creating a PDF printer for Windows with the ability to automatically choose the output filename, using only free software. This can be useful for "batch printing", for example to produce PDFs out of an ERP's batch print procedure, or in any circumstances where an "ask for filename dialog" would be uncomfortable or even unfeasible.

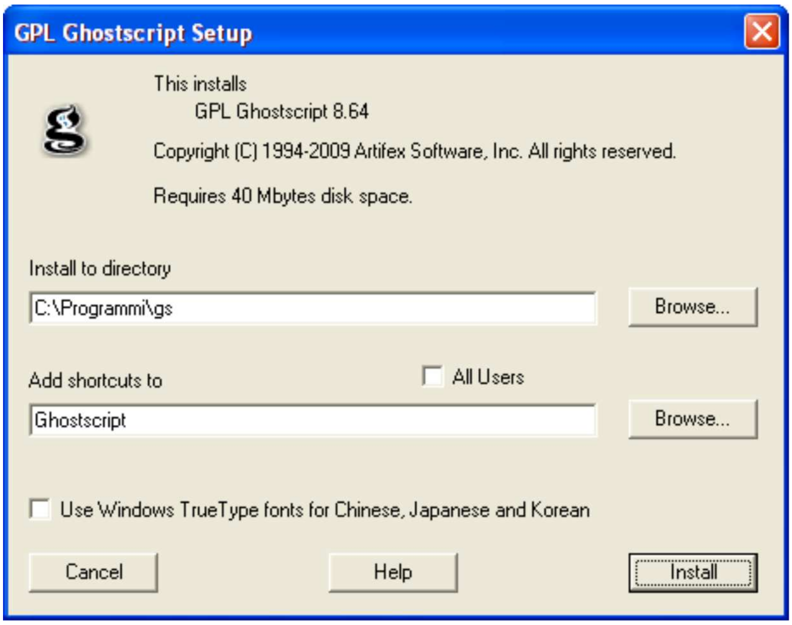
2. What's needed

- Ghostscript (http://mirror.cs.wisc.edu/pub/mirrors/ghost/GPL/current/)
- Mfilemon (https://sourceforge.net/projects/mfilemon/files/)

Once you have downloaded the required software, follow the instructions given below.

3. Install Ghostscript

You will need to install Ghostscript. Please keep in mind where you install it to, since we'll require it later.



GPL Ghostscript Setup

This installs
GPL Ghostscript 8.64

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Requires 40 Mbytes disk space.

Install to directory: C:\Programmi\gs

Add shortcuts to: Ghostscript

□ All Users

□ Use Windows TrueType fonts for Chinese, Japanese and Korean

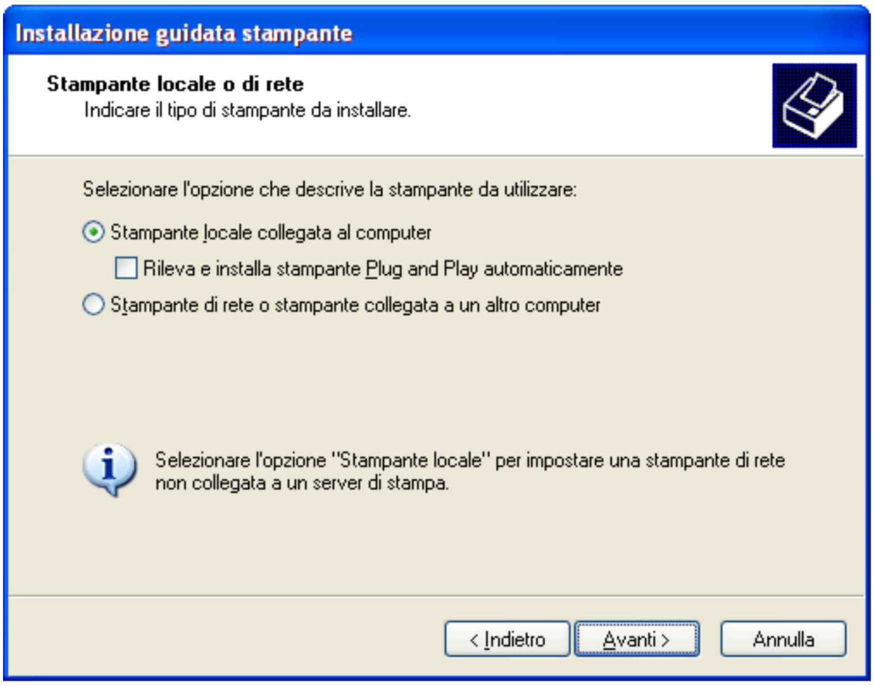
In our example Ghostscript will be placed in C:\Programmi\gs.

4. Install Multi File Port Monitor (Mfilemon)

Now install Mfilemon. There is nothing to choose during installation, except the language (english or italian).

5. Install PostScript printer and create the port

Once Ghostscript and Mfilemon are installed, we are ready to put them all together.
Go to control panel, printers. Choose Add printer, click Next.
When you're asked for local or network printer, choose "Local printer" and leave the Plug and Play checkbox blank:



Installazione guidata stampante

Stampante locale o di rete

Indicare il tipo di stampante da installare.

Selezionare l'opzione che descrive la stampante da utilizzare:

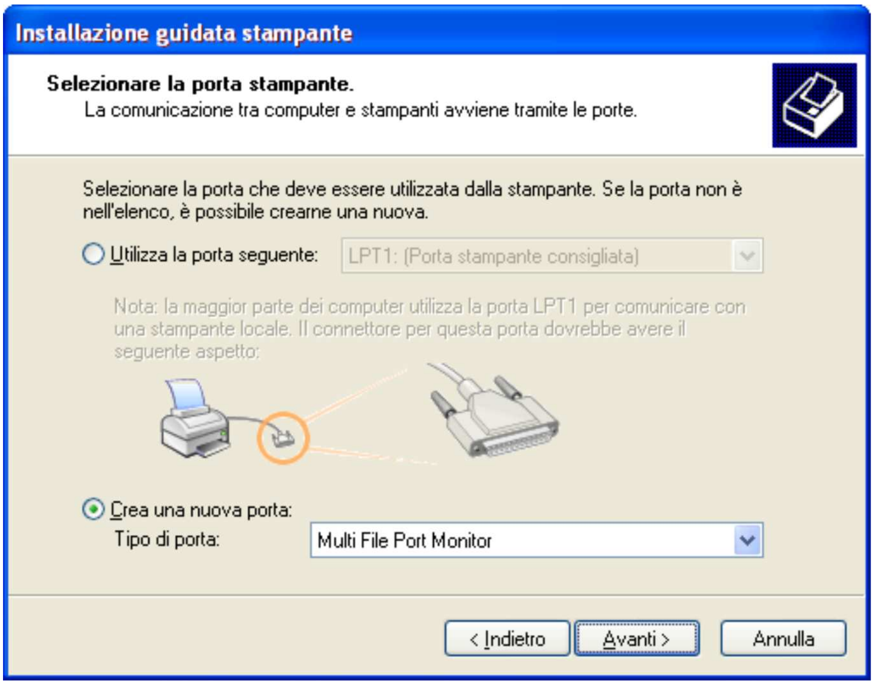
● Stampante locale collegata al computer

□ Rileva e installa stampante Plug and Play automaticamente

○ Stampante di rete o stampante collegata a un altro computer

Selezionare l'opzione "Stampante locale" per impostare una stampante di rete non collegata a un server di stampa.

Click Next. We must create and configure the port for this printer.
Choose "Create a new port", and from the drop down list choose "Multi File Port Monitor":



Installazione guidata stampante

Selezionare la porta stampante.

La comunicazione tra computer e stampanti avviene tramite le porte.

Selezionare la porta che deve essere utilizzata dalla stampante. Se la porta non è nell'elenco, è possibile crearne una nuova.

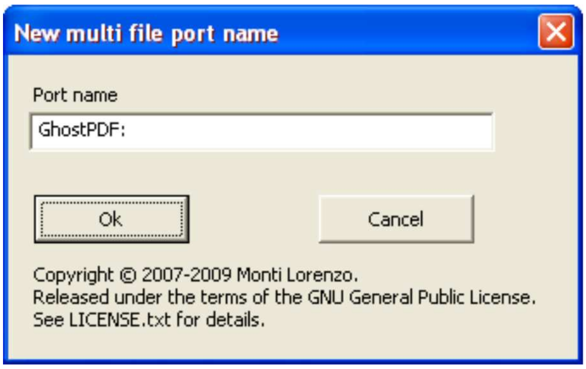
○ Utilizza la porta seguente: LPT1: (Porta stampante consigliata)

Nota: la maggior parte dei computer utilizza la porta LPT1 per comunicare con una stampante locale. Il connettore per questa porta dovrebbe avere il seguente aspetto:

● Crea una nuova porta:

Tipo di porta: Multi File Port Monitor

Click Next. You are asked for the name of the port:



New multi file port name

Port name: GhostPDF:

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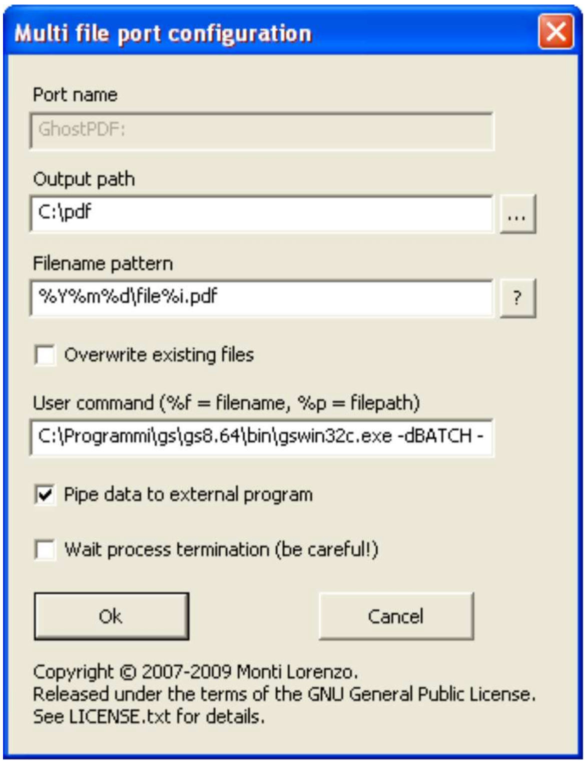
Let's call it "GhostPDF:", following the Windows tradition of appending a colon to printer port names. You can

give it the name of your choice, though. Click Ok.
The configuration dialog for the newly created port is shown. Let's fill it:



Port name: GhostPDF:

Output path: C:\pdf

Filename pattern: %Y%m%d\file%i.pdf

□ Overwrite existing files

User command (%f = filename, %p = filepath): C:\Programmi\gs\gs8.64\bin\gswin32c.exe -dBATCH -

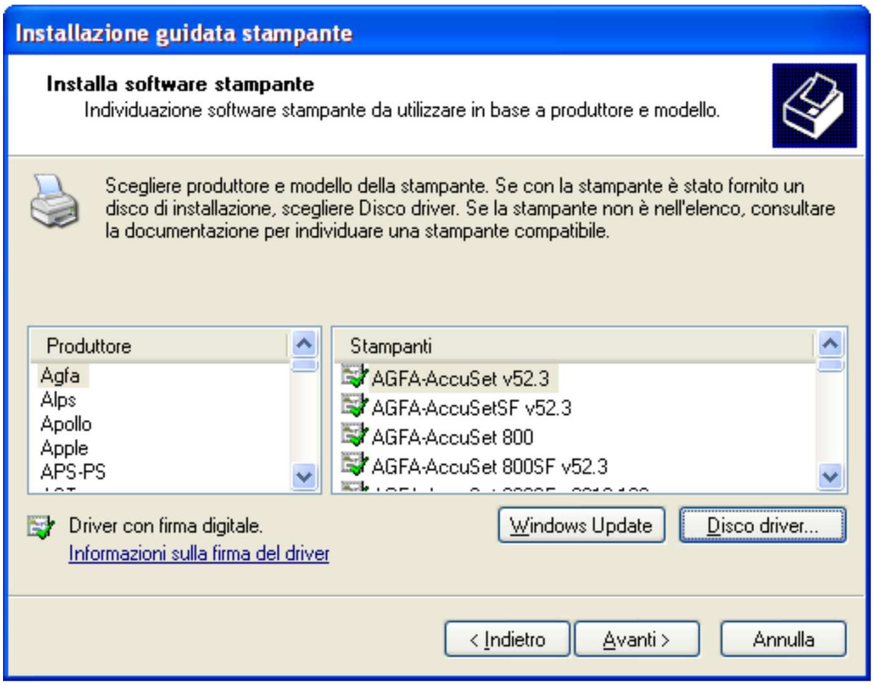
☑ Pipe data to external program

□ Wait process termination (be careful!)

Here is an explanation of the various parameters:

- **Output path** : the directory where PDF files will be placed.
- **Filename pattern** : a pattern made up of various "fields". The filename will be chosen in accordance to this pattern.
  A pattern can also include subdirectories, wich will be created "on the fly" as needed.
  In our example, we are instructing Mfilemon to create a folder named after the current year, month and day (eg. 20090604), then to choose a filename composed by the word "file", an integer of four digits ("%i"), and the suffix ".pdf" (eg. file0001.pdf). The %i field will grow each time, to ensure uniqueness of the filename (unless you choose to overwrite existing files, as explained next). If you want to explore other fields, click on the "?" button.
- **Overwrite existing files** : whether an existing file can be overwritten, or a new name must be produced according to the pattern.
- **User command** : an user defined executable that can be invoked to process data from the printer driver.
  In our example, the command line is:
  ```
  C:\Programmi\gs\gs8.64\bin\gswin32c.exe -dBATCH -dSAFER -dNOPAUSE
  -sDEVICE=pdfwrite -dPDFSETTINGS=/prepress -dAutoRotatePages=/PageByPage -r600
  -sOutputFile="%f" -
  ```
  Obviously, the full path to gswin32c.exe depends on the directory where Ghostscript was installed to, in step 3.
  Here we are invoking the console Ghostscript interpreter, telling it to write PDF (-sDEVICE=pdfwrite) to the file chosen by Mfilemon (-sOutputFile="%f") reading its source from standard input (the final dash).
- **Pipe data to external program** : if checked, data coming from the printer driver is sent to the "User command" through stdandard input. Else, data is spooled to the file first, and the "User command" is invoked afterwards.
  In our example, this flag must be true since we instructed Ghostscript to read its source from standard input.
- **Wait process termination** : if checked, the spooler is forced to wait for "User command" to exit. Be careful, since long running user commands will slow down the spooling process.

Click Ok. The "Add printer" wizard shows a list of printer models:



Installazione guidata stampante

Installa software stampante

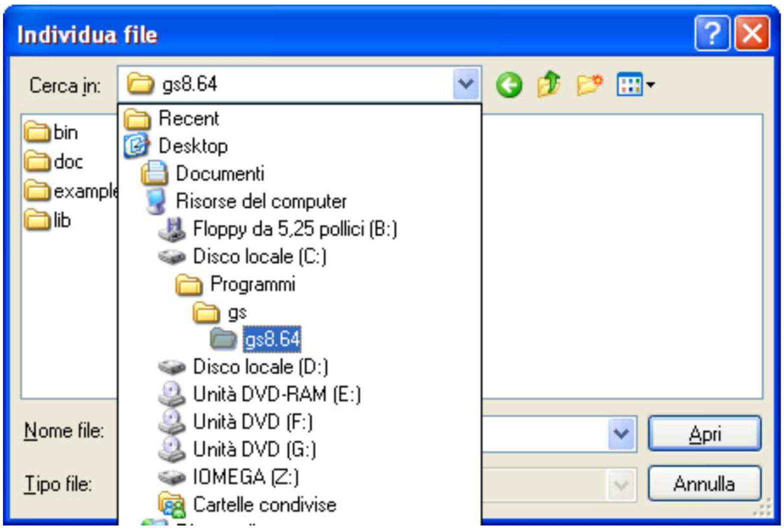
Individuazione software stampante da utilizzare in base a produttore e modello.

Scegliere produttore e modello della stampante. Se con la stampante è stato fornito un disco di installazione, scegliere Disco driver. Se la stampante non è nell'elenco, consultare la documentazione per individuare una stampante compatibile.

Driver con firma digitale.

Informazioni sulla firma del driver

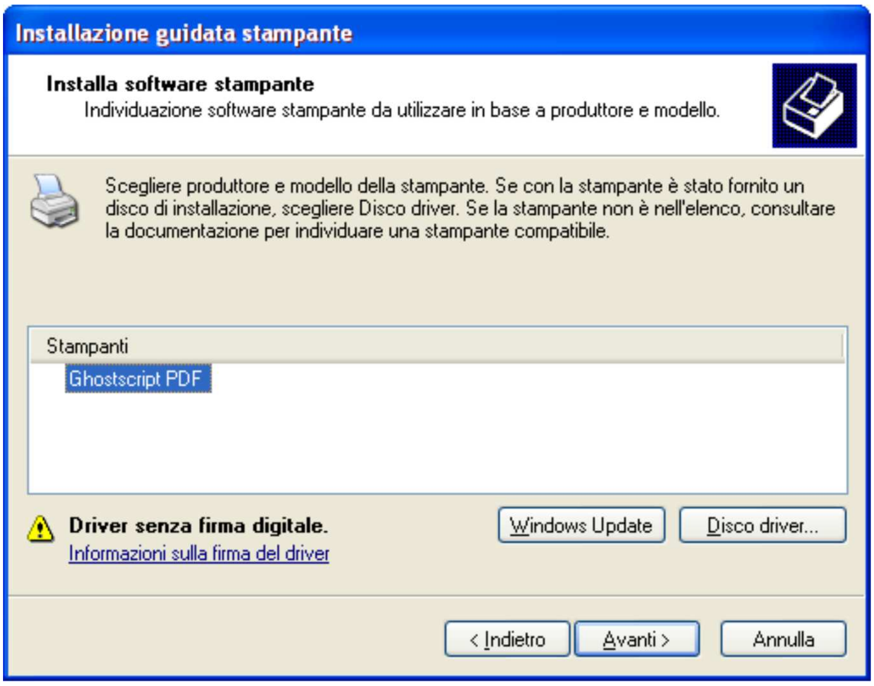
Click on "Have disk", then "Browse", then go to the directory where Ghostscript was installed:



Individua file

Cerca in: gs8.64

Enter the "lib" subdirectory, choose the file "ghostpdf.inf" and click Open, then Ok.
The following dialog appears, telling us that the file we choosed provides a printer named "Ghostscript PDF":



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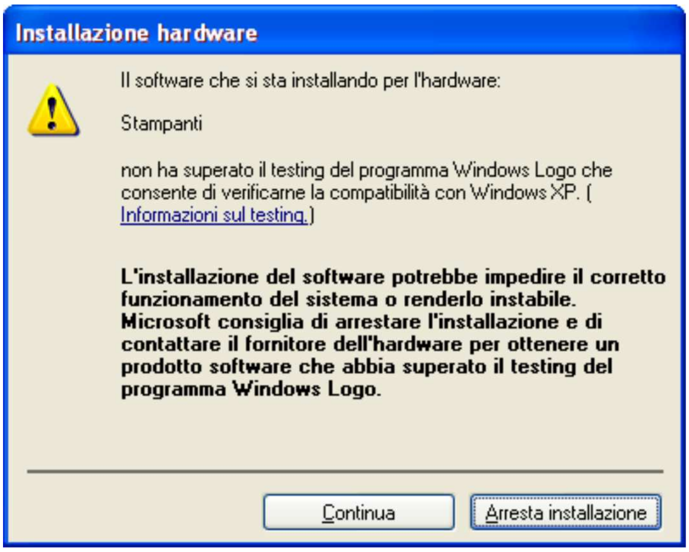
Stampanti

Ghostscript PDF

Driver senza firma digitale.

Informazioni sulla firma del driver

Choose the only available printer and click Next.
The wizard asks for a name for the printer (let's call it "Ghostscript PDF", "Auto PDF" or whatever name you like), whether it should be the default printer or not, and so on.
These tasks are common to all printers, so if you ever installed one on your system you don't need step by step instructions to finish this task. Only one note: during the copy of the driver files, Windows could complain about the missing "Windows Logo" certification:



Installazione hardware

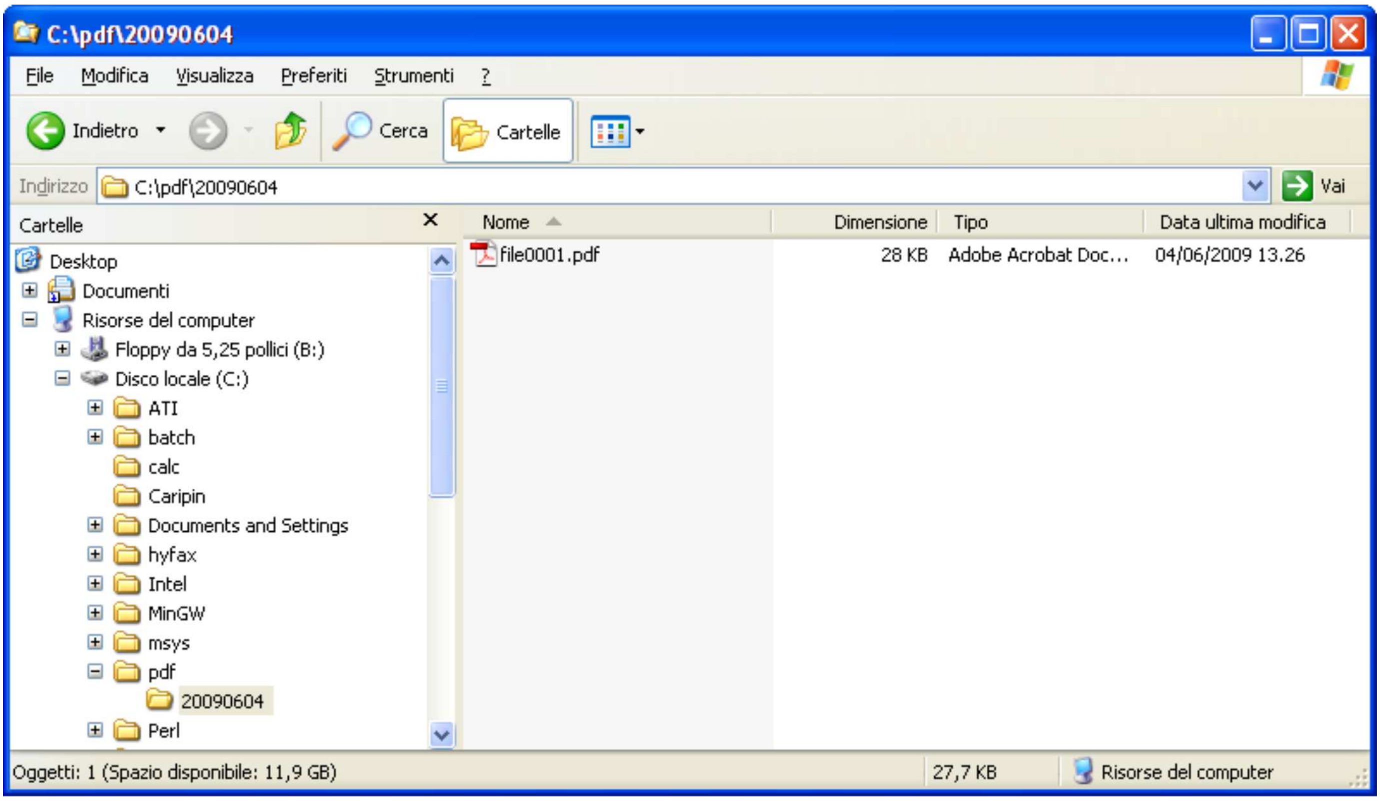
Il software che si sta installando per l'hardware:

Stampanti

non ha superato il testing del programma Windows Logo che consente di verificarne la compatibilità con Windows XP. (Informazioni sul testing.)

L'installazione del software potrebbe impedire il corretto funzionamento del sistema o renderlo instabile. Microsoft consiglia di arrestare l'installazione e di contattare il fornitore dell'hardware per ottenere un prodotto software che abbia superato il testing del programma Windows Logo.

Obviously, tell it to continue.
We are ready to test our PDF printer!
Open your favourite program, then print something to your newly created printer.
Go to My Computer, browse to C:\pdf. As you can see, Mfilemon has created a subdirectory (in my case, 20090604, that is today), and inside it Ghostscript has produced file0001.pdf:



Nome	Dimensione	Tipo	Data ultima modifica
file0001.pdf	28 KB	Adobe Acrobat Doc...	04/06/2009 13.26

Print something else and see what happens.
Have fun!

aug 04, 2009

A further enhancement is the introduction of the so called "search fields" (rel 1.3.3 of MFILEMON).

The goal is to benefit from the ability of Ghostscript to generate multiple "single page files" out of a single "multi page input", when the output format does not support multiple pages.

For example, you could want to print a multi-page document to several JPEG files, one per page, named as follows:

file0001-page1.jpg
file0001-page2.jpg
file0001-page3.jpg
file0002-page1.jpg
file0002-page2.jpg
and so on.

Ghostscript has a special syntax for this purpose: the use (surprise!) of special tags in the filename, which will be substituted at runtime. The tag %d will become the page number.

So, MFILEMON has to generate a filename, let's say, "file0001-page%d.jpg", and pass it to Ghostscript, which in turn will substitute %d with "1", "2", "3", and so on.

And here comes the complexity.

Since a file named exactly "file0001-page%d.jpg" will **never** exist on disk due to the Ghostscript tag manipulation, MFILEMON will **always** choose this file name, considering it available, and overwriting any existing file with that name.

We need a mechanism to tell MFILEMON:

- search for files whose name is **like** file0001-page*.jpg; if you find any, keep trying with the next number: file0002-page*.jpg, file0003-page*.jpg, and so on, until you find one that is available;
- **then**, generate a filename for Ghostscript, including the special tag %d.

The syntax for declaring a "search field" is:
`|literal|searchstring|`
where `literal` is interpreted "as is", without substitution done by MFILEMON, and `searchstring` is the string used for the search of the next available filename. Obviously, `searchstring` can contain wildcards.

An example will clarify.

Let's say we want to print each page of our documents to JPEG files.

We configure MFILEMON as follows:

User command = `C:\Programmi\gs\gs8.64\bin\gswin32c.exe -dBATCH -dSAFER -dNOPAUSE -sDEVICE=jpeg -dJPEGQ=85 -r200 -sOutputFile="%f" -`

Filename pattern = `file%i-page|%d|*|.jpg`

We are telling MFILEMON: use * during search, and %d when it comes to produce the output.

Let's say we have a three-pages document and print it.

This will produce:
file0001-page1.jpg

file0001-page2.jpg
file0001-page3.jpg
Now suppose we have another two-pages document and print it.
MFILEMON will start from %i=0001, and search for a file whose name is like file0001-page*.jpg (using the `searchstring`).
It will find three files, and proceed with the next number: 0002.
Since it won't find anything matching the name file0002-page*.jpg, it will stop searching and produce the filename using the `literal`.
Thus, the filename chosen by MFILEMON will be file0002-page%d.jpg, which Ghostscript, in turn, will translate to
file0002-page1.jpg
file0002-page2.jpg
That's all!
