TROUBLESHOOTING PRINTERS

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SUMMARY

Here is a step-by-step description of how you can troubleshoot printer problems for a “Windows..” computer.
PRINTING PROCESS

USER USES SOFTWARE APPLICATION TO CREATE A PRINT JOB → GDI (Graphics Device Interface) → PRINT SPOOLER → SPOOL FILES → PRINT PROCESSOR + PRINTER DRIVER → PORT MONITOR → PORT DRIVER → ACTUAL PHYSICAL PRINTER
Print job from your software application program

Port monitor (a software process) provides virtual USB ports or virtual network ports

Port drivers to interface the above software with the actual USB port or the actual WIFI adapter

Actual USB port or actual WIFI adapter of computer

USB cable or WIFI connection

Real physical printer

Virtual printer in "Printers" or "Devices and Printers" (= "Print queue") provides control interface for end-user

Port drivers to interface the above software with the actual USB port or the actual WIFI adapter

Actual USB port or actual WIFI adapter of computer

USB cable or WIFI connection

Real physical printer
STRATEGY FOR TROUBLESHOOTING PRINTERS

Run tests on various components of the printing process, starting with the most common problems to the more complex problems.
STRATEGY FOR TROUBLESHOOTING PRINTERS (continued)

Big Step 1: Check the port monitor
Big Step 2: Check the print spooler
Big Step 3: Check the creation of print spooler files
Big Step 4: Check the print processor and the GDI rendering engine
Big Step 1: Check the Port Monitor

Go to “Devices and Printers”
Locate the (virtual) Printer.
Right-click on the Printer.
Click on “Properties”.
Click on the “Ports” tab.
See if the correct (virtual) port is checked.
Small Step 101:
Go to “Devices and Printers” in the “Control Panel (Windows 7 or Windows 8) or go to “Printers and Faxes in the “Control Panel” (Windows XP)
Screen Shot of Small Step 101:
Small Step 102: Locate the (virtual) printer (="print queue" in Microsoft terminology):
Screen Shot of Small Step 102:
Small Step 103:
Use the RIGHT mouse button to right-click on the (virtual) printer:
Screen Shot of Small Step 103:
Small Step 104:
Click on “Printer Properties”:
Screen Shot of Small Step 104:
Small Step 105:
Click on the “Ports” tab:
Screen Shot of Small Step 105:
Small Step 106:
See if the correct Port is checked:
Screen Shot of Small Step 106:
Screen Shot of Small Step 106:

![HP DeskJet 950C/952C/959C Properties](image)

Print to the following port(s). Documents will print to the first free checked port.

<table>
<thead>
<tr>
<th>Port</th>
<th>Description</th>
<th>Printer</th>
</tr>
</thead>
<tbody>
<tr>
<td>FILE:</td>
<td>Print to File</td>
<td>HP DeskJet 950C/952C/959C</td>
</tr>
<tr>
<td>USB002</td>
<td>Virtual printer port for USB</td>
<td>HP DeskJet 950C/952C/959C</td>
</tr>
<tr>
<td>USB001</td>
<td>Virtual printer port for USB</td>
<td>HP Color LaserJet 2600n</td>
</tr>
<tr>
<td>TPVM:</td>
<td>ThinPrint Print Port for VMware</td>
<td></td>
</tr>
<tr>
<td>10.0.0.15</td>
<td>Standard TCP/IP Port</td>
<td>HP Color LaserJet 2600n</td>
</tr>
<tr>
<td>XPSPort</td>
<td>Local Port</td>
<td>Microsoft XPS Document</td>
</tr>
<tr>
<td>NULL:</td>
<td>Local Port</td>
<td>Send To OneNote 2010</td>
</tr>
</tbody>
</table>

- Add Port...
- Delete Port
- Configure Port...

- Enable bidirectional support
- Enable printer pooling
Screen Shot of Small Step 106:
Big Step 2: Check Print Spooler

Go to a Search box, a Run box, or an elevated Command Prompt. Type in “services.msc” (without the quotation marks and press the “Enter” key.

Locate the Print Spooler service. Make sure that it is “Started” and “Automatic”
Small Step 201:
Go to a Search box, a Run box, or an elevated Command Prompt:
Screen Shot of Small Step 201:
Small Step 202:
Type in “services.msc” and press the Enter key:
Screen Shot of Small Step 202:
Small Step 203:
Locate the “Print Spooler” service:
Screen Shot of Small Step 203:
Small Step 204:
Use the RIGHT mouse button to right-click on the “Print Spooler” service:
Screen Shot of Small Step 204:
Small Step 205:
Use the RIGHT mouse button to right-click on the “Print Spooler” service:
Screen Shot of Small Step 205:
Small Step 206:
Click on “Properties”: 
Screen Shot of Small Step 206:
Small Step 207:
Make sure that the “Print Spooler” service is “Started” and “Automatic”: 
Screen Shot of Small Step 207:

Print Spooler Properties (Local Computer)

- **Service name:** Spooler
- **Display name:** Print Spooler
- **Description:** Loads files to memory for later printing
- **Path to executable:** C:\Windows\System32\spoolsv.exe
- **Startup type:** Automatic
- **Service status:** Started

You can specify the start parameters that apply when you start the service from here.

Start parameters:
Big Step 3: Check the Creation of Print Spooler Files

Start “Windows Explorer”.

Go to

C:\Windows\System32\Spool\PRINTERS\
Big Step 3: Check the Creation of Print Spooler Files
Go to the (virtual) Printer in “Devices and Printers” and print a test page.
A .SHD and a .SPL file will be temporarily created in the “PRINTERS” folder.
Small Step 301:
Start “Windows Explorer:
Screen Shot of Small Step 301:
Small Step 302:

Go to

C:\Windows\System32\Spool\PRINTERS\
Screen Shot of Small Step 302:
Small Step 303:

Go to the (virtual) Printer in "Devices, right-click on the (virtual) printer, click on "Printer properties", and click on "Print Test Page" :
Screen Shot of Small Step 303:
Small Step 304:

A .SHD and a .SPL file should have been temporarily created in the “PRINTERS” folder.
Screen Shot of Small Step 304:
Screen Shot of Small Step 304:

<table>
<thead>
<tr>
<th>Name</th>
<th>Date modified</th>
<th>Type</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>FP00000.SHD</td>
<td>1/2/2013 1:26 PM</td>
<td>SHD File</td>
<td>0 KB</td>
</tr>
<tr>
<td>FP00000.SPL</td>
<td>1/2/2013 1:26 PM</td>
<td>Shockwave Flash Object</td>
<td>111 KB</td>
</tr>
</tbody>
</table>
Small Step 305:
When the test print job finishes, the .SHD and a .SPL file in the Printers folder should disappear:
Screen Shot of Small Step 305:
Big Step 4: Check the “Print Processor” and the “GDI Rendering Engine”

If you have not already done so, go to


Download and install both the free “Converter” and “CutePDF”.
Big Step 4: Check the “Print Processor” and the “GDI Rendering Engine” (continued)

Use the “CutePDF Writer” printer to print a test page.

If the “Print Processor” and the “GDI Rendering Engine” are both working, “CutePDF” should let you make a PDF file.
Small Step 401:

If you have not already done so, go to

CutePDF™ Writer

Convert to PDF documents on the fly — for Free!

Portable Document Format (PDF) is the de facto standard for the secure and reliable distribution and exchange of electronic documents and forms around the world. CutePDF Writer is the free version of commercial PDF converter software. CutePDF Writer installs itself as a “printer subsystem”. This enables virtually any Windows applications (must be able to print) to convert to professional quality PDF documents - with just a push of a button!

FREE for commercial and non-commercial use! No watermarks! No Popup Web Ads!

Have specific and advanced needs above and beyond that of other users?
Integrate PDF creation ability into any application, solution, service or terminal server (e.g. Citrix) environment and more. Custom Redistribution now available!

Installation Requirements
- Requires PS2PDF converter such as Ghostscript (recommended).
  You can get the free GPL Ghostscript 8.15 here.

GNU Ghostscript is an open-source interpreter for the PostScript language and the PDF file format. It is distributed under the GNU General Public License. You may obtain the source code for
GPL Ghostscript 8.15 here.

What’s New
- Added support for both 32-bit and 64-bit Windows 8.
Small Step 402:

Download and install the free “Converter” AND then download and install from the “Download” hyperlink:
CutePDF™ Writer

Convert to PDF documents on the fly — for Free!

Portable Document Format (PDF) is the de facto standard for the secure and reliable distribution and exchange of electronic documents and forms around the world. CutePDF Writer is the free version of commercial PDF converter software. CutePDF Writer installs itself as a "printer subsystem". This enables virtually any Windows applications (must be able to print) to convert to professional quality PDF documents - with just a push of a button!

FREE for commercial and non-commercial use! No watermarks! No Popup Web Ads!

Have specific and advanced needs above and beyond that of other users? Integrate PDF creation ability into any application, solution, service or terminal server (e.g. Citrix) environment and more. Custom Redistribution now available!

Installation Requirements

- Requires PS2PDF converter such as Ghostscript (recommended). You can get the free GPL Ghostscript 8.15 here.

 GNU Ghostscript is an open-source interpreter for the PostScript language and the PDF file format. It is distributed under the GNU General Public License. You may obtain the source code for GPL Ghostscript 8.15 here.

What's New

- Added support for both 32-bit and 64-bit Windows 8.
Small Step 403:

Go to “Devices and Printers” in the “Control Panel” and locate the “CutePDF Writer” printer:
Screen Shot of Small Step 403:
Small Step 404:

Use the RIGHT mouse button to right-click on the “CutePDF Writer” printer:
Screen Shot of Small Step 404:
Small Step 405:

Click on “Printer properties”: 
Screen Shot of Small Step 405:
Small Step 406:

Click on “Print Test Page”:
Screen Shot of Small Step 406:
Small Step 407:

If the “Print Processor” and the “GDI Rendering Engine” are both working, “CutePDF” should let you make a PDF file.
A test page has been sent to your printer

This test page briefly demonstrates the printer's ability to print graphics and text, and it provides technical information about the printer. Use the printer troubleshooter if the test page does not print correctly.

Get help with printing
Screen Shot of Small Step 407:

Move up to CutePDF Pro and get advanced control over your PDF documents. Easily merge & split PDFs, add security, digital signature, stamps, bookmarks or header/footer, make booklets, n-Up, save PDF forms, scan to PDF and more!

http://www.CutePDF.com