

Issue with universal Filter

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Bug Report re. *cups-filters-core-drivers v2.0.0-0ubuntu4*

I received the description of a printing issue from an long-standing customer running CUPS print servers.

Their description was *"Printing from Windows Clients with 'driverless' printing does not reliably work with the new Ubuntu-24.04-LTS. It sometimes does not 'do the right thing' when it comes to duplex short-edge printing, because then the first page is garbled."*

We narrowed it down to a problem which seems to be related to...

1. ...usage of the new `universal` CUPS-Filter shipping as part of the *cups-filters-core-drivers* package.
2. ...specific spool files submitted by clients who use Adobe Acrobat on Windows.

How to reproduce

You can reproduce the problem in a Linux terminal by manually running `cupsfilter` on one example spoolfile I received from the customer.

Command line in terminal

You can use any PPD on your system (at least for me the results were not depending the PPD I used):

```
cupsfilter -p /etc/cups/ppd/MeinDrucker.ppd \  
          d00264-002 \  
          > spoolfile-processed-by-universal-d00264-002.pdf
```

Output <stderr>

```
cupsfilter: File "/usr/lib/cups/filter/hpps" permissions OK (0100755/uid=0/gid=0).  
cupsfilter: File "/usr/lib/cups/filter/commandtops" permissions OK (0100755/uid=0/gid=0).  
DEBUG: argv[0]="cupsfilter"  
DEBUG: argv[1]="1"  
DEBUG: argv[2]="kp"  
DEBUG: argv[3]="d00264-002"  
DEBUG: argv[4]="1"  
DEBUG: argv[5]=""  
DEBUG: argv[6]="d00264-002"  
DEBUG: envp[0]="CONTENT_TYPE=application/vnd.adobe-reader-postscript"  
DEBUG: envp[1]="CUPS_DATADIR=/usr/share/cups"  
DEBUG: envp[2]=""  
DEBUG: envp[3]="CUPS_SERVERBIN=/usr/lib/cups"  
DEBUG: envp[4]="CUPS_SERVERROOT=/etc/cups"  
DEBUG: envp[5]="LANG=C.UTF8"  
DEBUG: envp[6]="PATH=/usr/lib/cups/filter:/usr/bin:/usr/sbin:/bin:/usr/bin"  
DEBUG: envp[7]="PPD=/etc/cups/ppd/MeinDrucker.ppd"  
DEBUG: envp[8]="PRINTER_INFO=cupsfilter"  
DEBUG: envp[9]="PRINTER_LOCATION=Unknown"  
DEBUG: envp[10]="PRINTER=cupsfilter"  
DEBUG: envp[11]="USER=kp"  
DEBUG: envp[12]="CHARSET=utf-8"  
DEBUG: envp[13]="FINAL_CONTENT_TYPE=application/pdf"  
INFO: universal (PID 38051) started.  
DEBUG: ppdFilterLoadPPD: Color profile qualifier determined from job and PPD data '.Unspecified.600dpi'  
DEBUG: ppdFilterLoadPPD: No ICC profiles specified in PPD  
DEBUG: ppdFilterLoadPPD: Searching for profile "-/Unspecified"...
```

```

ERROR: ppdFilterLoadPPD: Last filter could not get determined, page logging by the PDF filter turned of
DEBUG: ppdFilterLoadPPD: Last filter determined by the PPD: None; Final data MIME type: application/pdf
DEBUG: ppdFilterUniversal: "*cupsFilter(2): ..." lines in the PPD file:
DEBUG: ppdFilterUniversal: application/vnd.cups-raw application/octet-stream 0 -
DEBUG: ppdFilterUniversal: application/vnd.cups-postscript 0 hpps
DEBUG: ppdFilterUniversal: PPD uses "*cupsFilter: ..." lines, so we always convert to format given by F
DEBUG: ppdFilterUniversal: Converting from application/vnd.adobe-reader-postscript to application/pdf
DEBUG: cfFilterUniversal: Converting from application/vnd.adobe-reader-postscript to application/pdf
DEBUG: cfFilterUniversal: Final output format for job: application/pdf
DEBUG: cfFilterUniversal: Adding ghostscript to chain
DEBUG: cfFilterUniversal: Adding pwgtopdf to chain
INFO: cfFilterChain: Running filter: ghostscript
INFO: cfFilterChain: Running filter: pwgtopdf
INFO: cfFilterChain: ghostscript (PID 38052) started.
DEBUG: cfFilterGhostscript: Output format: PWG Raster
INFO: cfFilterChain: pwgtopdf (PID 38053) started.
DEBUG: cfFilterGhostscript: Copying input to temp file "/tmp/094a467b94627"
DEBUG: cfFilterPWGToPDF: OUTFORMAT="PDF"
DEBUG: Color Manager: Calibration Mode/Off
DEBUG: Calling FindDeviceById(cups-cupsfilter)
DEBUG: Failed to send: org.freedesktop.ColorManager.NotFound:device id 'cups-cupsfilter' does not exist
DEBUG: Failed to get find device cups-cupsfilter
DEBUG: cfFilterGhostscript: Input format: PostScript
DEBUG: Color space requested: Default
DEBUG: Final output format: PWG Raster
DEBUG: Print rendering intent = auto
DEBUG: Color Manager: Calibration Mode/Off
DEBUG: Calling FindDeviceById(cups-cupsfilter)
DEBUG: Failed to send: org.freedesktop.ColorManager.NotFound:device id 'cups-cupsfilter' does not exist
DEBUG: Failed to get find device cups-cupsfilter
DEBUG: Calling FindDeviceById(cups-cupsfilter)
DEBUG: Failed to send: org.freedesktop.ColorManager.NotFound:device id 'cups-cupsfilter' does not exist
DEBUG: Failed to get device cups-cupsfilter
DEBUG: Color Manager: ICC Profile: None
DEBUG: cfFilterGhostscript: Ghostscript using Any-Part-of-Pixel method to fill paths.
DEBUG: cfFilterGhostscript: Ghostscript command line: gs -dQUIET -dSAFER -dNOPAUSE -dBATCH -dNOINTERPOL
DEBUG: cfFilterGhostscript: Started Ghostscript (PID 38057)
DEBUG: cfFilterGhostscript: Started logging (PID 38058)
INFO: cfFilterGhostscript: Start rendering...
INFO: cfFilterGhostscript: Processing page 1...
DEBUG: cfFilterGhostscript: %[ ProductName: GPL Ghostscript ]%%
ERROR: cfFilterGhostscript: Error setting MediaClass...
ERROR: cfFilterGhostscript: Error setting MediaClass...
DEBUG: cfFilterGhostscript: Input data feed completed
INFO: cfFilterPWGToPDF: Starting page 1.
INFO: cfFilterGhostscript: Processing page 2...
INFO: cfFilterGhostscript: Processing page 3...
DEBUG: cfFilterGhostscript: %[Page: 1]%%
DEBUG: cfFilterGhostscript: %[Page: 2]%%
DEBUG: cfFilterGhostscript: %[LastPage]%%
INFO: cfFilterGhostscript: Rendering completed
DEBUG: cfFilterGhostscript: Ghostscript (PID 38057) exited with no errors.
DEBUG: cfFilterGhostscript: Logging (PID 38058) exited with no errors.
DEBUG: cfFilterChain: ghostscript completed with status 0.
INFO: cfFilterChain: ghostscript (PID 38052) exited with no errors.
INFO: cfFilterPWGToPDF: Starting page 2.
DEBUG: cfFilterPWGToPDF: ICC Profile embedded in PDF.
DEBUG: cfFilterPWGToPDF: ICC Profile embedded in PDF.
DEBUG: cfFilterChain: pwgtopdf completed with status 0.
INFO: cfFilterChain: pwgtopdf (PID 38053) exited with no errors.
INFO: universal (PID 38051) exited with no errors.

```

You will probably notice three lines standing out...

```
ERROR: cfFilterGhostscript: Error setting MediaClass...
ERROR: cfFilterGhostscript: Error setting MediaClass...
DEBUG: cfFilterGhostscript: Ghostscript (PID 38057) exited with no errors.
```

...where the last one (“*exited with no errors*”) seems to contradict the previous ones clearly hinting at some sort of “*ERROR*”.

Resulting output file is “Ok-ish”

Despite the error reported by cfFilterGhostscript...

- an **output PDF is created nevertheless**
- **however**;, the 1st page is invisible, the 2nd page looks normal

However, if you try to view the output in a PDF viewer, you will notice...

1. ...the first page at first seems to be empty
2. ...the second page looks quite normal

Upon a closer look, you will notice:

- You can zoom into the first page and discover something very tiny in the top left corner of the page
- You can see the string “Seite 1” if you zoom even more, but it is horizontally mirrored

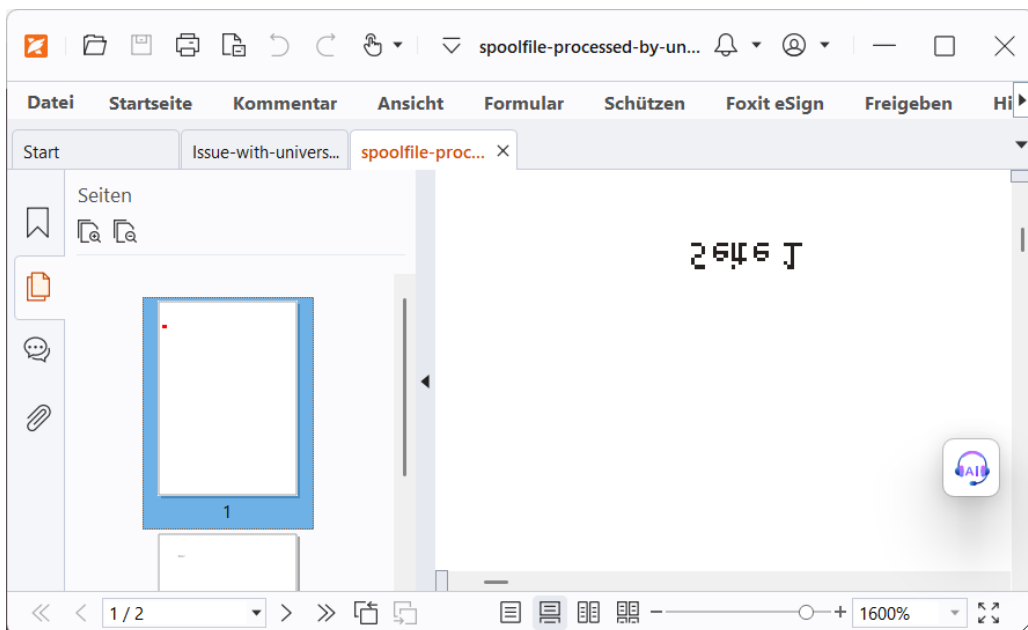


Image 1: Extreme zoom level required to discover rendering marks on page 1.

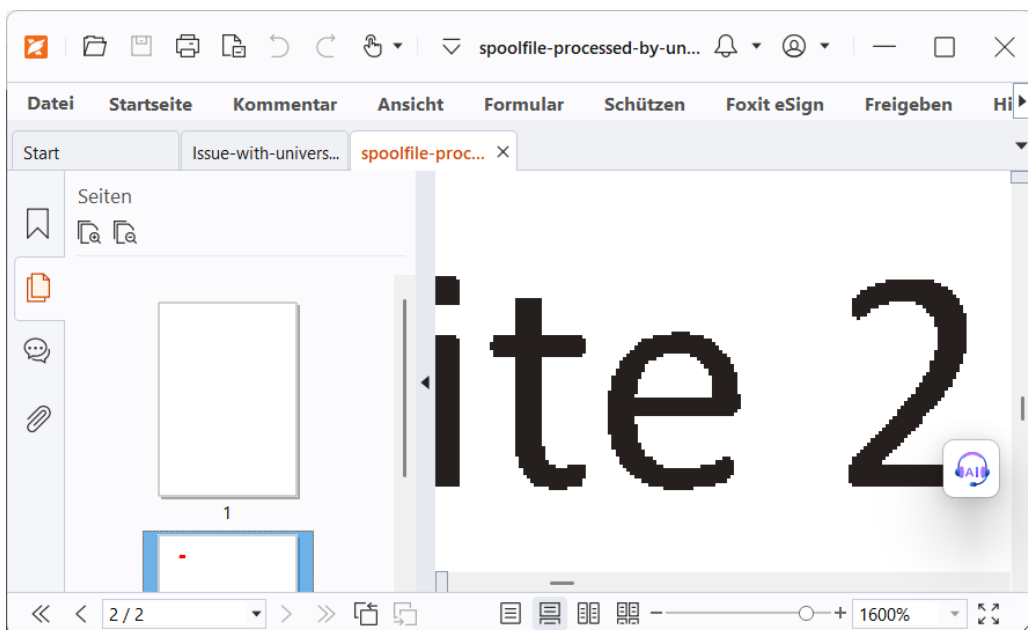


Image 2: Same zoom level for second as first page.

So you can forget about the detail where the original error description mentioning short-sided duplex printing, however you can probably imagine where it came from: the customer picked a print from his printer, looked at both sides of the paper and discovered nothing, or a “garbled” something on page 1.

Open questions...

```
DEBUG: cfFilterGhostscript: Ghostscript command line: gs -dQUIET -dSAFER -dNOPAUSE -dBATCH
-dNOINTERPOLATE -dNOMEDIAATTRS -dUsePDFX3Profile -sstdout=%stderr -sOutputFile=%stdout
-sDEVICE=cups -sMediaClass=PwgRaster -sOutputType=automatic -dDuplex -r600x600 -dDEVICEWIDTHPOINTS=595
-dDEVICEHEIGHTPOINTS=842 -dcupsBitsPerColor=8 -dcupsColorOrder=0 -dcupsColorSpace=19 -dcupsBorderlessSc
-dcupsInteger1=1 -dcupsInteger2=1 -scupsRenderingIntent=auto -scupsPageSizeName=A4 -scupsBackSideOrient
-dcupsManualCopies -I/usr/share/cups/fonts -sOutputICCProfile=srgb.icc -c -f -_
```

Peculiar and eye-catching details

I emphasize a detail which caught my eye:

DEBUG: cfFilterGhostscript: Ghostscript command line:

```
gs -dQUIET -dSAFER -dNOPAUSE -dBATCH -dNOINTERPOLATE -dNOMEDIAATTRS
-dUsePDFX3Profile -sstdout=%stderr -sOutputFile=%stdout -sDEVICE=cups
-sMediaClass=PwgRaster
-sOutputType=automatic -dDuplex -r600x600 -dDEVICEWIDTHPOINTS=595
-dDEVICEHEIGHTPOINTS=842 -dcupsBitsPerColor=8 -dcupsColorOrder=0
-dcupsColorSpace=19 -dcupsBorderlessScalingFactor=0.0000 -dcupsInteger1=1
-dcupsInteger2=1 -scupsRenderingIntent=auto -scupsPageSizeName=A4
-scupsBackSideOrientation=Normal -dcupsManualCopies
-I/usr/share/cups/fonts -sOutputICCProfile=srgb.icc -c -f -_
```

To me, “**MEDIAClass=xyzRASTER**” somehow looks weird...

Input file

The input to this command came from *Adobe Reader* when trying to print a document. It was fished out of the `/var/spool/cups/` directory on the CUPS server. This is what the auto-typing by `cupsfilter` noted about it:

```
DEBUG: envp[0]="CONTENT_TYPE=application/vnd.adobe-reader-postscript"
```

This very same spool file is processed by Ghostscript without any problem, only `cupsfilter` and `universal` seem to run into problems with it.

```
$ gs -o d00264-002-processed-by-ghostscript.pdf
-sDEVICE=pdfwrite d00264-002
GPL Ghostscript 10.02.1 (2023-11-01)
Copyright (C) 2023 Artifex Software, Inc. All rights reserved.
This software is supplied under the GNU AGPLv3 and comes with NO WARRANTY:
see the file COPYING for details.
Loading NimbusMonoPS-Regular font from /usr/share/ghostscript/10.02.1/Resource/Font/NimbusMonoPS-Regular... \
4385136 2879292 1974824 685387 1 done.
Querying operating system for font files...
%%[ ProductName: GPL Ghostscript ]%%
%%[Page: 1]%%
%%[Page: 2]%%
%%[LastPage]%%
GPL Ghostscript 10.02.1: Page object was reserved for an Annotation destination, but no such page was d
```

Looking at the Ghostscript output file “`d00264-002-processed-by-ghostscript.pdf`” does not exhibit any problem, . unlike the output of the `universal` filter, which clearly shows some rendering issue.