

Printer Drivers and Large Photos

A Learn in 30 presentation
by John Krout
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Agenda

- What is a large photo? See some examples.
- Printer Driver activities
- Activities slowed down by inclusion of large photos in a document
- Two ways to accelerate large photo printing
- Ways to reduce size of files containing large photos

Gigantic photos

- Digital photos, even smart phone photos, are gigantic compared those taken even just 15 years ago.
- Resolution of 20 megapixels is widespread in digital SLRs and even in phones.
- Exceeding 50 megapixels is not uncommon.
- Some phone makers have creating phone cameras with 100+ megapixel resolution.

Composite Panoramas

- Computer software for creating composite panoramas has been available for 20+ years.
- See my **Get that Photo** presentation, September 2021, on the PATACS recent meetings page.
- Some phones automate production of composite panoramas with even greater resolution.
- Composite panoramas are far higher resolution than the camera provides in a single photo.
- Greater resolution provides greater detail to attract the eye.

Example panorama

- This composite panorama depicts Mt Saint Helens, August 2022.
- Originally 80 megapixels
- This version is 13 megapixels and 9.4 MB JPG file



Example panorama

- Great Falls, November 2022
- Originally 70 megapixels and 104 MB TIFF file
- This version is 14 megapixels and 31 MB JPG file



Printer Driver purposes

What does a printer driver do?

- Turns text into text printing instructions for the printer.
- **Resizes photos** to print in the space available on the paper page.
- Turns a resized photo into bitmap printing instructions for the printer.

My 2023 photo calendar

- My photo calendar theme for 2023 was **Panoramas**.
- I included two or three panoramas per month.
- The two shown in the prior slides were included.
- The slide deck file was originally **800 megabytes**.
- **Saving and loading** took a very long time.
- Making **file backups** took a very long time.

My 2023 photo calendar

- Making **design tweaks** in the document took a very long time.
- **Printing** took a very long time, due to resolution reduction by the printer driver.
- I planned to publish 20 copies, so I needed to accelerate all of that.

Printer Drivers and Large Photos

A Printer Driver Resizes Photos

- You know that a printer driver is specifically prepared to print on your printer model.
- For photos, the key purpose of the driver is to fit big photos to the resolution limit of your printer model.
- In my own situation, my printer can print 6,600 pixels across 11 inches of photo paper (600 Dots per inch).
- Most of my panorama images were 3 or more times wider than 6,600 pixels.
- The printer driver took **minutes to resize each photo.**

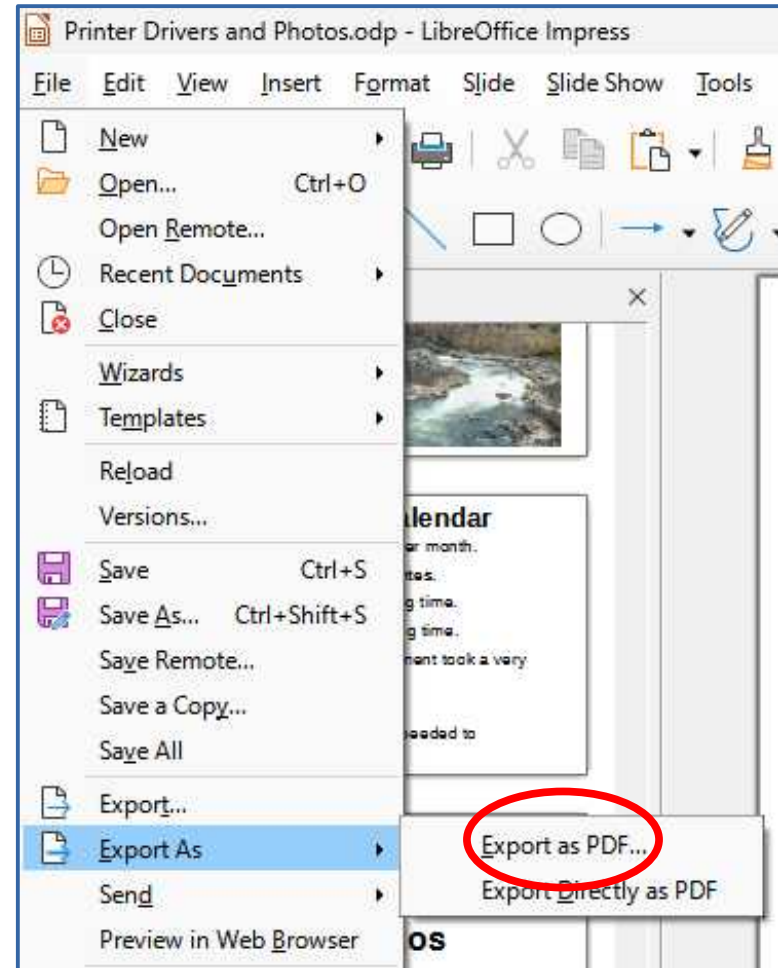
Two Ways to Accelerate Printing Large Photos

First solution: Print as a PDF

- Converting to a PDF file is very much a printing process, and conversion includes photo resizing.
- Both Powerpoint and LibreOffice Impress provide ways to set resolution.
- Set PDF DPI to your printer's maximum.
- Printing gigantic images to PDF can take a long time
- The PDF creation time is an **investment in speedy printing**. Each print made from the PDF requires no resizing by the printer driver, and will happen very quickly.

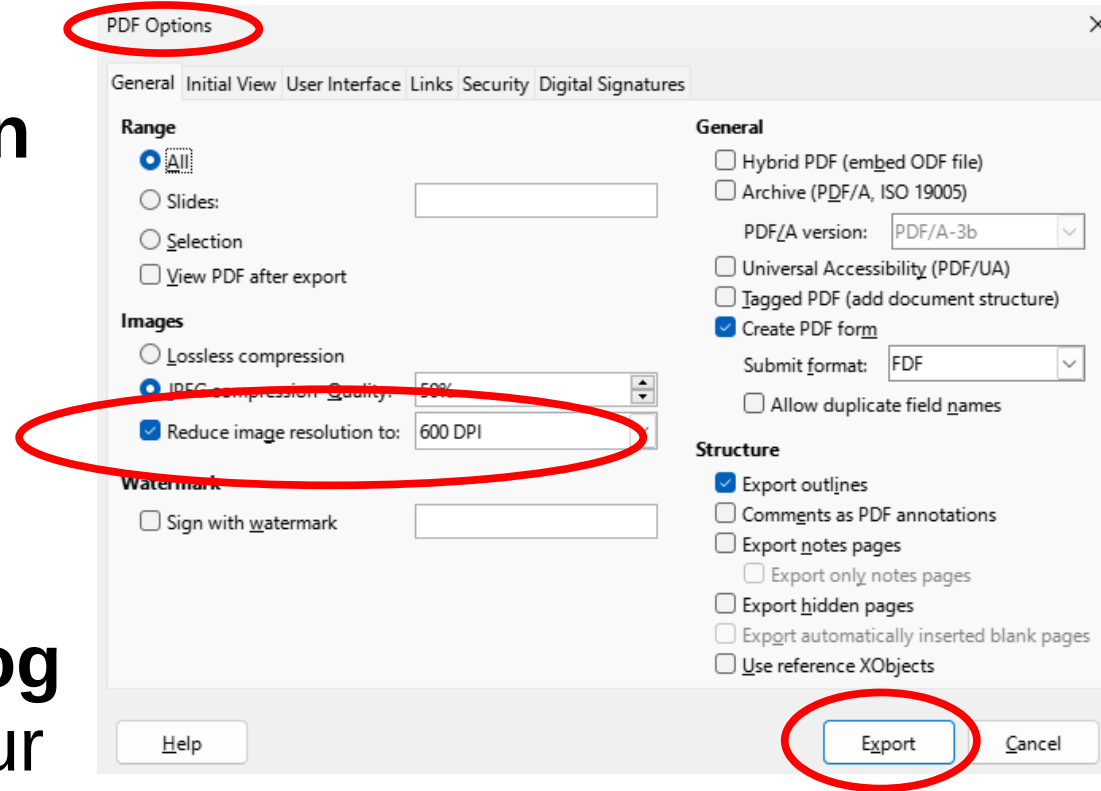
Example: LibreOffice 7.5

- In the **File** menu, select **Export As**
- In the sub-menu, select **Export as PDF...**



Example: LibreOffice 7.5

- A **PDF Options** popup appears.
- In the popup, select **Reduce Image Resolution** to and enter the max DPI of your printer.
- Click the **Export** button.
- The popup closes.
- A standard **Save File dialog window** appears. Give your new PDF a file name, and choose a folder in which to store the PDF file.



Printing the PDF file to the printer is fast, but ...

- Often I find design tweaks are needed in the document.
- The original document file is still huge.
- Still takes time to load, save, make backups.
- Editing still takes time.

Second solution:

Resize each photo manually

- Requires you to know the max resolution of your printer.
- Reduce size of each photo to occupy the photo's space on the page at your printer's max resolution.
- Software can do photo resizing: examples include **Windows Paint, Irfanview shareware, PhotoShop Elements, PaintShop Pro.**
- Remove original-size photo from your document.
- Insert reduced size photo in document in place of its original.

Examples of resizing

<i>Printer DPI:</i>	<i>300</i>	<i>600</i>	<i>1200</i>
Photo longest side length on page			
1"	300	600	1,200
3"	900	1,800	3,600
5"	1,500	3,000	6,000
7"	2,100	4,200	8,400
9"	2,700	5,400	10,800
11"	3,300	6,600	13,200

Multiply Printer DPI by photo longest side length on page to obtain photo side length in pixels on page.

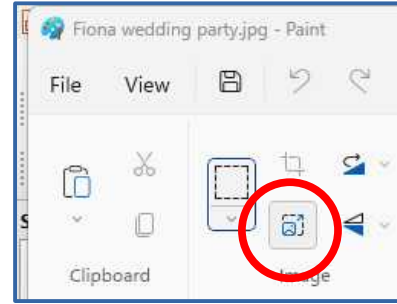
Resize photo to match the pixel length in its page space.

Advantages of Resizing

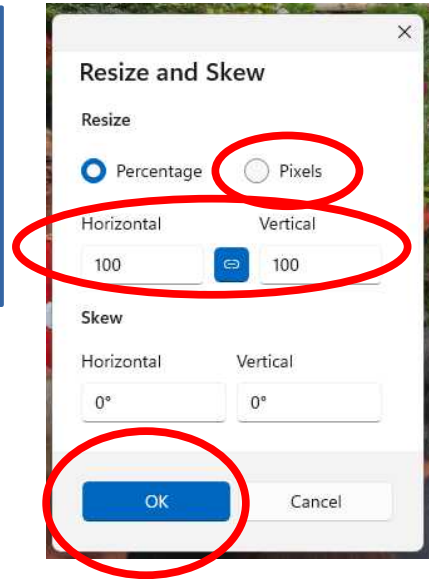
- Minimizes document file size
- Editing is faster
- Faster saving, loading, backing up document file
- Print at max printer speed because **printer driver does no resizing**

Resizing with Windows Paint

- Load the large photo
- Click the **Resize button** or tap **CTRL-W**

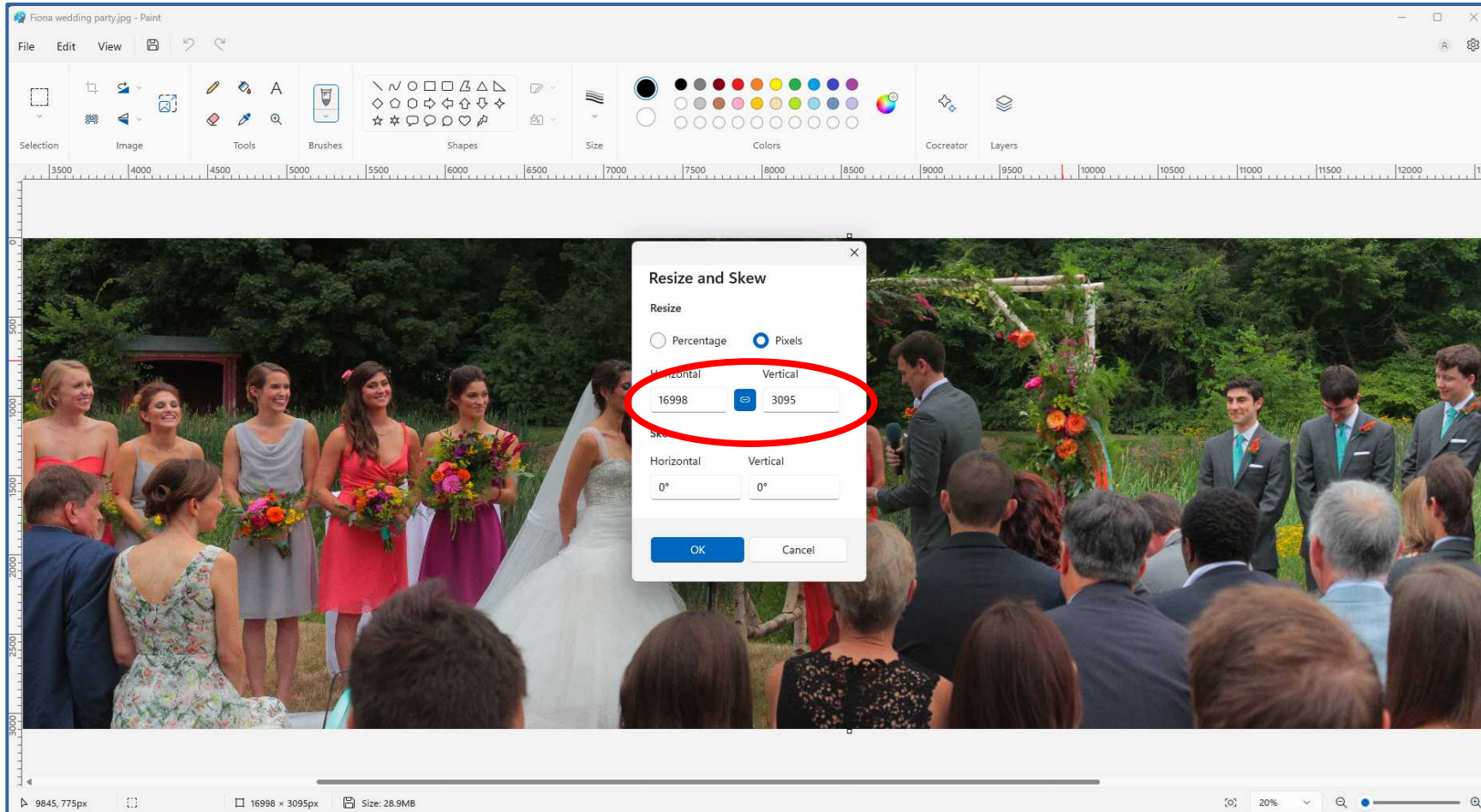


- A popup appears. Click the **Pixels** button.
- The popup displays the current photo width and height in pixels.



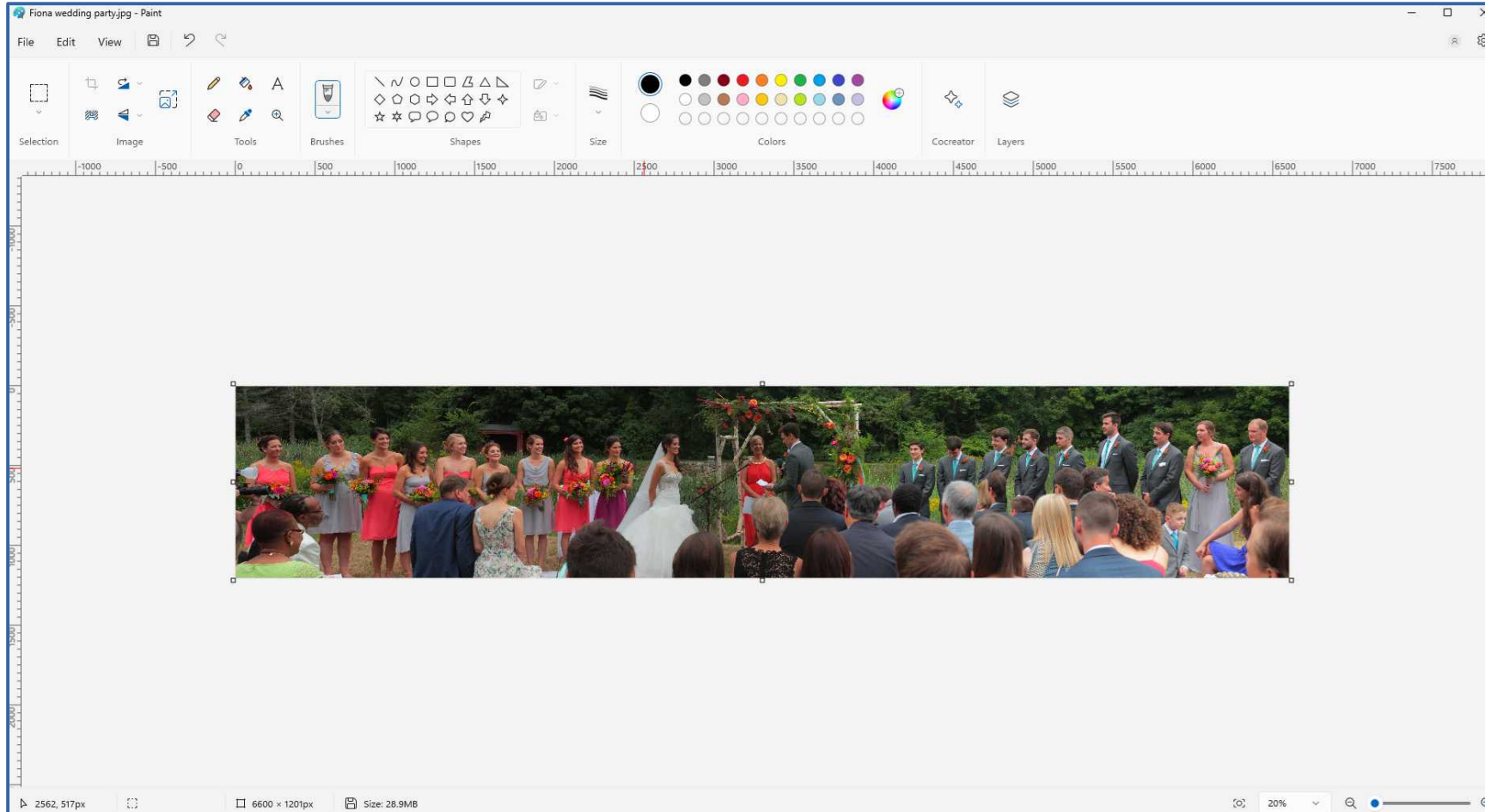
- Change the Horizontal or Vertical value to the desired pixel count. The other value adjusts automatically.
- Click the **OK button**. The popup closes.
- The photo is resized.

Example panorama in Paint



16,998
pixels
wide

Reduced Size Panorama in Paint



Reduced
to 6,600
pixels
wide

After resizing

- Save the resized photo under a new name or in a separate folder, to avoid mix-up with the original.
- Open the document, remove the full-resolution photo, and Insert the resized photo from storage.
- OR, you can Select All (CTRL-A) and Copy (CTRL-C)
- Open the document, remove the full-resolution photo, and Paste the resize photo (CTRL-V)

More ways to speed up printing

- Make sure your computer has generous paging space.
- Set paging space to at least twice the size of RAM in your computer.
- Shut down all applications and reboot your computer.
- This reboot step ensures maximum RAM is available for printer driver use.
- Then start your application, load the photo or file containing photos, and start printing.

Another way to reduce file size

- Both MS Office and LibreOffice enable **photo cropping** within their applications.
- However, after using those applications to crop, the ***complete un-cropped photo remains physically embedded*** within the application file.
- The file remains bulky. That condition slows down file loading and file saving, and can slow down editing.
- Instead, crop using an external tool such as Windows Paint. Copy and paste the cropped photo to the open file where you want the cropped photo to appear.

The Final Word

- My 2023 calendar file, created in LibreOffice Impress, was reduced from 800 MB to **300 MB** in size by reducing photo sizes using Windows Paint.
- Loading, saving, editing and printing speed all improved quite a bit.

The End