

Picture Window Pro 8 Design Goals

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Introduction

After more than 20 years of incremental enhancement, I am undertaking a redesign of Picture Window Pro from the ground up to take advantage of recent hardware and software advances. The overall design goals are to modernize the user interface, improve performance and make the code easier to maintain. Version 8 places its focus squarely on image editing and retouching, rather than trying to create an all-in-one program that includes a wide range of features without necessarily being especially good at any of them. Specialized functions such as image cataloging, raw file processing, slide shows, scanning, panorama stitching, focus stacking, etc. can be better performed by other programs designed for those specific tasks.

User Interface

One main window displays the current image relatively large with optional side panels that let you navigate among images and provide access to image editing controls. Editing controls can be dragged to a secondary monitor.

The entire sequence of operations necessary to obtain a result image is recorded so any step in the editing process can be modified at any time and the intermediate results update automatically. This sequence of operations can be saved with the image so it can be reworked in a later session or it can be applied to other images.

This paradigm reduces window clutter and confusion and lets you make changes without having to remember and repeat the whole series of subsequent operations. Within this framework, the goal is to maintain and in some cases extend the tools in earlier versions of Picture Window Pro, including color management, image transformations, masking, retouching, printing, etc.

Internal Technology Refresh

Picture Window is being converted to function as a Unicode application throughout; this permits using or intermixing characters and symbols from different languages.

Picture Window is also becoming “dpi-aware” to support modern high-resolution monitors. Non-dpi-aware Windows programs are run using coarser resolution when you use the Windows control panel to enlarge text display, which defeats the whole reason for getting a high-resolution monitor in the first place. On the other hand, if you don’t increase the text size, menus and icons are displayed so small they are very difficult to use. Dpi-aware applications automatically draw their text and icons larger on high-dpi displays to make them legible while maintaining the full resolution of the display so images look sharper.

Performance

Modern graphics cards, especially NVidia, have much more processing power than the main computer chip. This comes largely from having many independent processing units which can perform calculations in parallel. Current high end NVidia cards can, with some limitations, run as many as 2000 simultaneous threads, compared to only 8 for the Intel Core i7. Some of this performance improvement is offset by having to copy images from main memory to the graphics card and back and in multitasking overhead, but significant improvements should be possible nonetheless.

Maintainability

In the interests of making Picture Window the best at what it does and to keep the program of manageable size and complexity, at least initially, some existing features will be removed. These include support for reading raw image files,

the image browser, album printing, TWAIN, Photo CD, slide show, certain file formats, and some obsolete or unnecessary transformations. Hopefully the final result will be a useful, efficient and high quality image editing tool.