OptimiData

... for optimized data handling

JP2view

JPEG2000 Image Compression

Reference Manual

Version 1.5

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(Windows Version)

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JP2view is partly based on the J2000 Software
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The sample images enclosed to this JP2view software are provided by the Independent JPEG Group (IJG).

The JP2view software is using the Independent JPEG Group (IJG) JPEG software.

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1 Introduction

JP2view allows simple compression and decompression of baseline JPEG2000 (file format and codestream) via graphical user interface. Based on the International Image Compression Standard ITU-T.800, ISO/IEC 15444-1 the JPEG2000 C-SDK offers the following functions:

- Lossless and lossy compression of continuous tone still images using a single algorithm
- Improved compression performance with respect to most of other lossless or lossy image compression schemes
- Full control about the generated file size of a lossy compressed image
- Support of progressive decompression in several image viewers
- Baseline JPEG2000 file format and codestream can be decoded by any other JPEG2000 image decoding software

For further information about the JPEG2000 image compression algorithm please refer to the appropriate standardization document. The document can be found at

http://www.itu.org

For further information about JP2view please refer the website:

http://www.optimidata.com

2 Installation

JP2view is delivered as a Microsoft Installer file:

- MSI archive **OptimiData_JP2view_E.msi** for Windows platforms

To install the application double-click the installer file. The Installation wizard guides you through the installation process.

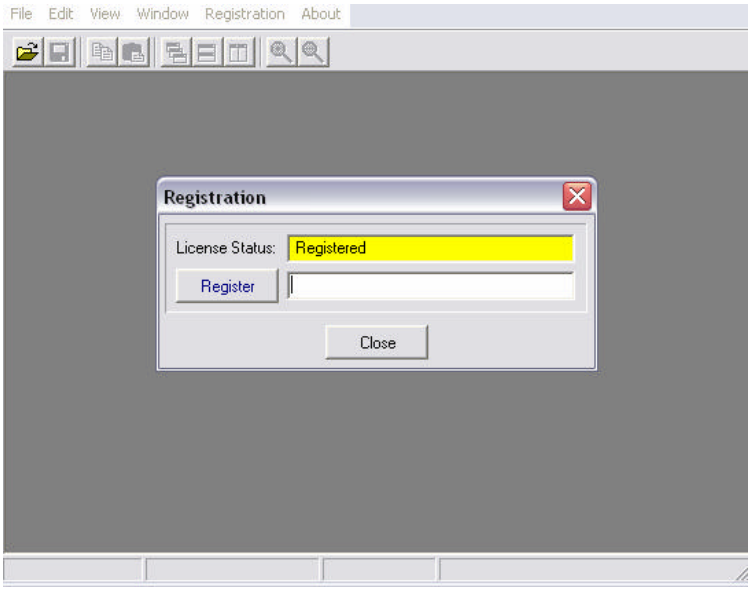
Current Windows operating systems (Win 2000 / XP) support the Microsoft Installer service. If you are using older operating systems (like Win 95 / 98), please make sure, that you have installed the latest version of the Microsoft Installer service (available from Microsoft website www.microsoft.com).

3 Registration

JP2view is delivered with 1 month evaluation license. To register for unlimited license start program and open registration menu in the main window.

Type in license code (received after payment) and click on "Register". License status will change to "registered" afterwards (Figure 1).

Figure 1: Registration screen



4 Windows Viewer program

The Windows viewer program is delivered as a compiled version and not available in source code. It allows the compression and decompression of images into JPEG2000 and other general purpose image formats as the old JPEG or Windows Bitmap.

4.1 Features of the Viewer program

The viewer program `JP2view.exe` offers the following features:

- Compression and Decompression of various image file formats (Windows Bitmap *.bmp, Standard JPEG *.jpg) into JPEG2000 (file format *.jp2 and codestream *.j2k)

- Display of multiple image files in one viewer
- Drag and Drop of multiple image files into the viewer
- Zoom in, Zoom out in 10% steps with indication of the current zooming step
- Window display modes: cascade, tile horizontally, tile vertically
- License Registration
- Supported operating system (Windows XP / 2000 / NT / 95 / 98 / ME)
- Image information in windows title bar: filename, image size, bit depth, compression ratio and filesize
- Current image information in status bar: Mouse position, pixel value (RGB) and zoom factor
- Context menu (right mouse button click)

4.2 Usage of the Viewer program

Important note:

YOU SHOULD RUN THE PROGRAM WITH TRUE COLOR MODE. PLEASE CHOOSE THE APPROPRIATE COLOR DEPTH OF YOUR GRAPHICS ADAPTER

A splash-screen, as depicted in Figure 2, is shown and disappears after some seconds or after a mouse-click. After that, the main window of the viewer is immediately shown.

If the current settings of your graphics adapter do not support the display of true-color (either 24 or 32 bit) images, an information box as depicted in Figure 3 recommends you to choose other graphic adapter settings.

Figure 2: Splash screen of the viewer program

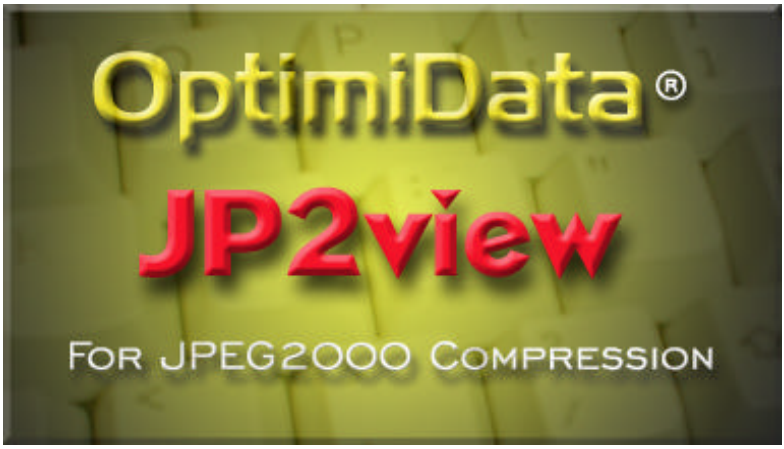


Figure 3: Information box recommending true-color display mode

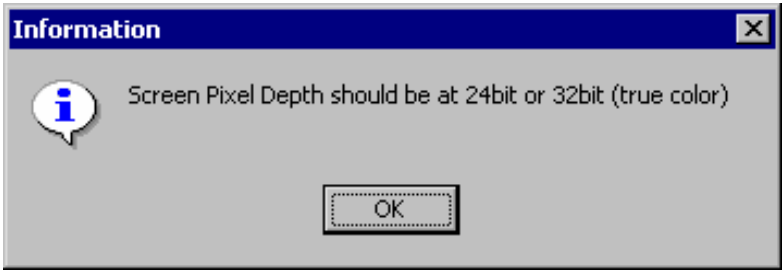
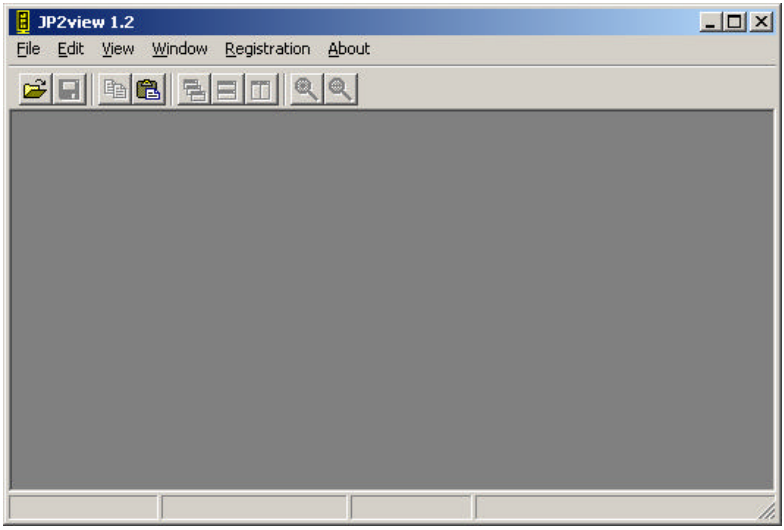


Figure 4: Main Window of the viewer program



The Main Window offers a menu bar as well as a toolbar to control the compression and decompression parameters as well as functions for the registration and image window arrangement.

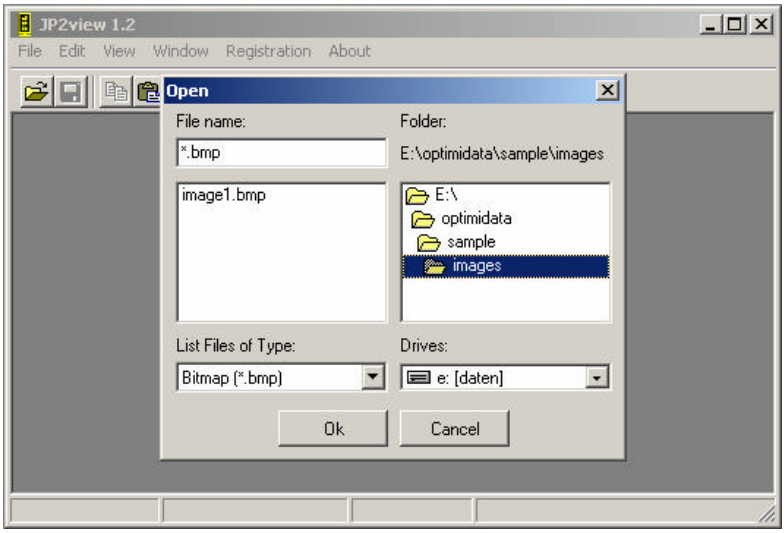
4.3 Open Images

The viewer allows to open images of the following formats:

- Windows Bitmap (*.bmp)
- Old JPEG (*.jpg)
- JPEG2000 File (*.jp2)
- JPEG2000 codestream (*.j2k)

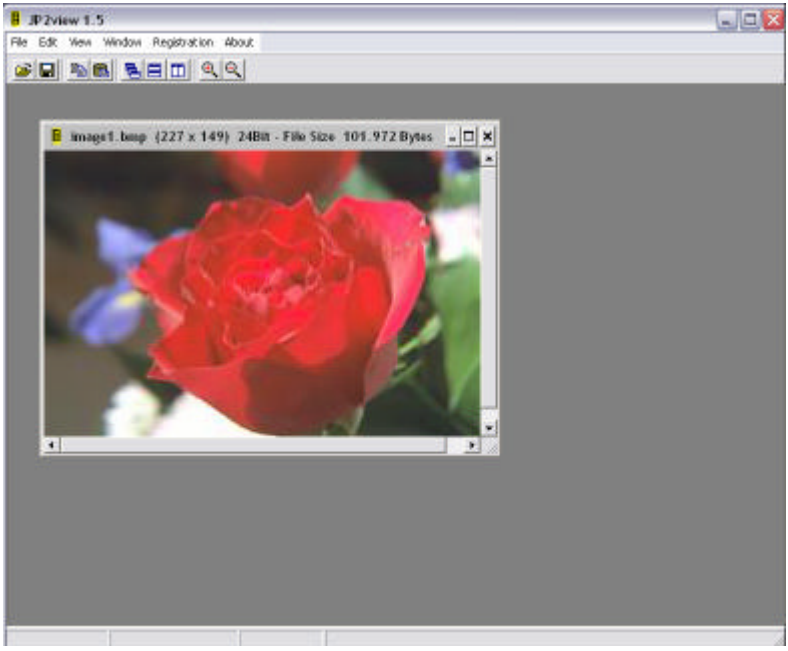
This can be performed by clicking the symbol of the toolbar or by using the ***File - open*** menu option. The “File Open” dialog box appears as shown in Figure 5.

Figure 5: File Open dialog box



You can navigate through the directory structure and select the image to open into the viewer. After selection click **OK** to open the image. The image file is loaded and shown as in Figure 6.

Figure 6: Image viewer with opened image



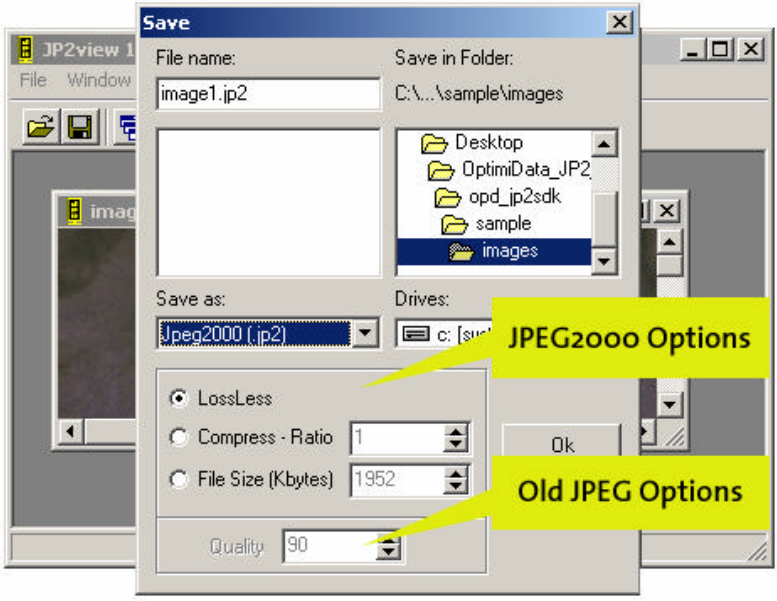
4.4 Save and compress images

The viewer can save the images using the following image formats:

- Windows Bitmap (*.bmp)
- Old JPEG (*.jpg)
- JPEG2000 File (*.jp2)
- JPEG2000 codestream (*.j2k)

This can performed by clicking the button of the toolbar or by using the ***File - save*** menu option. The **"Save File"** dialog box is shown in Figure 7. Depending on the choosen image format the **"Save File"** dialog box enables control elements to enter compression parameters. Saving images as windows bitmaps does not allow any compression. All additional control elements are disabled while saving as windows bitmap.

Figure 7: Save File Dialog box



Save as JPEG2000 (*.jp2 or *.j2k):

The upper part of the compression options are used to control the parameters. The compression can either be performed lossless by means of no image content is lost during compression or lossy at a specific compression ratio given as a file size or a compression ratio. The radio button control is used

to choose this compression option. While the image file size of a lossless compressed image cannot be determined, no destination file size or compression ratio can be entered using the lossless option. The resulting file size is image dependent and will most likely result in a file which is between 30% (3:1 compression) and 20% (5:1 compression) of the original file size.

By entering a determined compression ratio, the JPEG2000 compression will be performed in lossy mode and will result in a destination file with a file size as given with the compression ratio. A compression ratio of 10 will reduce the file to 10% of the original file size. Typical compression ratios for lossy JPEG2000 compression are between 30 and 50.

By entering a destination file size, the JPEG2000 compression will be performed in lossy mode and will result in a file with a file size as given in the save dialog box.

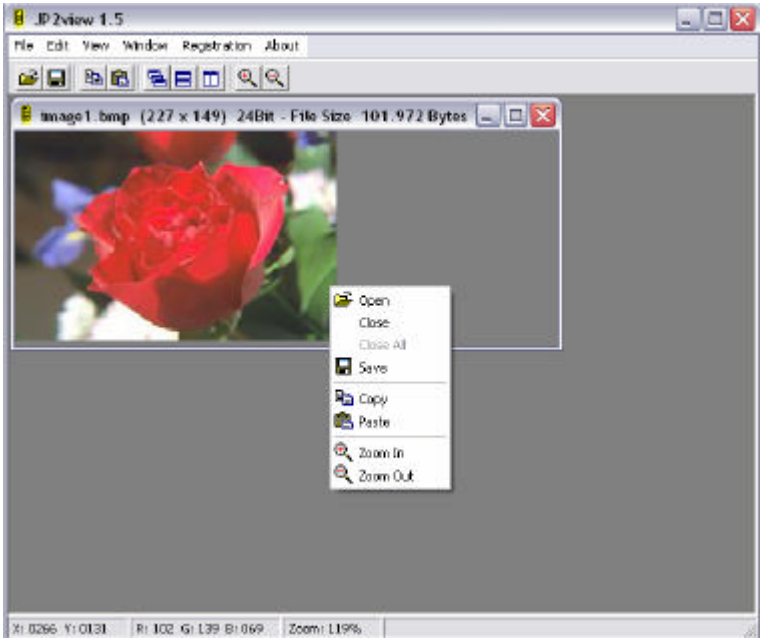
Save as Old JPEG (*.jpg):

The lower part of the compression options is used to control the parameters of Old JPEG compression. An abstract quality parameter ranging between 1 and 100 can be used to control the quality of the compressed image. While a quality of 100 will result in a moderate compressed image at a good image quality, a quality of 1 will result in a highly compressed image with clearly visible loss of image quality.

4.5 Context Menu

Context menu may be opened with right mouse button click. Menu functions are depicted in Figure 8.

Figure 8: Context Menu



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