



# the standard for imaging tools

## A High-Performance API for Image Viewing and Printing

A central requirement in developing any imaging application is including the ability to view and/or print content *after* it has been scanned into your system and *before* it enters your overall workflow. And whether you are a corporate programmer writing an application for internal use, or an independent software developer creating a product for millions of users, the right tools are mission-critical. The right tool to fulfill this requirement is PixTools®/View toolkit, which provides viewing and printing functionality with unmatched power and ease-of-use.

From Pixel Translations, a division of Captiva Software, PixTools/View is a full-featured API that provides all the necessary image viewing and printing functions (e.g., image display, rotation, scale, scale-to-gray and annotation). It handles image file I/O, along with memory management functions to optimize performance. Offering maximum flexibility, PixTools/View has been successfully integrated into hundreds of applications. (Demonstration applications are available to evaluate this exciting technology in Windows Me, 98, 2000, NT 4.0, and XP.)

The toolkit can be used alone, or in conjunction with other PixTools products such as PixTools/Scan and/or PixTools/IP. This flexibility provides developers with a complete environment in which to meet their numerous, varied document imaging application needs.

### FAST

PixTools/View combines in-memory storage of compressed images with superior decompression libraries, resulting in both rapid image display and minimal memory usage. It optimizes operations like image rotation and annotation updates.

### IMAGE ANNOTATION

Enhance your images with a multitude of annotations, including the following:

- Multi-colored highlighting
- Freehand line drawing
- Polyline drawing
- Redaction (opaque overlays)
- “Sticky notes”
- Arrow objects
- Stamp tool (can choose a BMP file and “endorse” the image with it)

## PixTools/View

- Box tool (draw a rectangular outlined box object)
- Ellipse tool (draw an elliptical or circular outlined object)
- Read/write Eastman format annotations
- Text tool that supports special characters (Unicode)

### HTTP/FTP FILE SUPPORT

PixTools/View is web ready! View image files on the Internet just as you would view them on your local disk drive.

### COLOR, GRAYSCALE, AND BINARY SUPPORT

PixTools/View supports 24-bit color images, grayscale, and black and white (binary) images. The color support includes palette conversion and dithering to display full 24-bit images on 8-bit displays and/or conversion to gray or binary data.

### BROAD CAPABILITIES & LOCALIZATION SUPPORT

- Image compression and decompression: CCITT Group 3 and Group 4, Sequential and Progressive JPEG, JPEG 2000, JBIG, PCX, PDF, and more
- Image file handling: TIFF, BMP, CALS, JPEG, JPEG 2000, PCX/DCX, JBIG, GIF, PDA, PNG, CAL
- Arbitrary rational number scale factors, separate for X and Y
- Arbitrary rectangle clipping for fast scroll and repaint functionality
- Scaling with variable black or white biasing for readability
- True scale-to-gray (anti-aliasing) with brightness and contrast control
- Image rotation
- Multipage file reading and writing for TIFF, DCX and PDF.
- Image file conversion
- Optional Windows GUI elements including the Pan Window and page settings dialog
- Localization support is available for Italian, French, German, Spanish, and Japanese

### IMAGE CACHING AND PREFETCHING

Page images are automatically cached and pre-fetched in the background, which maximizes performance while minimizing memory requirements. By using document-oriented commands, the programmer can specify the file(s) composing the document. Each file may contain one or more images. The images are accessed on a page number basis, regardless of the file name or record designator of the image source.



## INTERFACE OVERVIEW

The API uses two primary data structures:

- **PIXM\_PAGE**—holds the image data and characteristics of an image (width, height, resolution)
- **PIXM\_SETTINGS**—holds the description of a desired piece of image (scale factor, rotation, offset)

The API allows the user to create and load a page with compressed or uncompressed image data, then a “get rectangle” call is made with Settings appropriate for the display or print operation.

### Function Summary

#### Page Functions:

- **PageNew** Create a new page storage structure
- **PageGet** Get an attribute value from a page storage structure
- **PageSet** Set attribute values in a page storage structure
- **PageStore** Transfer a buffer of image data (compressed or uncompressed) into a page storage structure
- **PageEnd** All data has been transferred
- **PageFree** Destroy page storage structure and free all related resources

#### Settings Functions:

- **SettingsNew** Create a new settings structure
- **SettingsGet** Get an attribute value from a settings structure
- **SettingsSet** Set an attribute value in a settings structure
- **SettingsCopy** Create a copy of a settings structure
- **SettingsFree** Destroy a settings structure and free all related resources

Attributes include X and Y offset, width, height, X and Y scale factor, rotation, brightness/ contrast.

#### Display Functions:

- **RectGet** Using a Page structure and a Settings structure, retrieve the selected scaled and rotated image rectangle into the supplied buffer (platform independent)
- **RectPaint** Using a Page structure, a Settings structure, and a Window handle, paint the selected scaled and rotated image rectangle into the Window (platform dependent)

Data types accepted by the library include:

- BMP run length encoding (Windows)
- CCITT Group 3 1-D
- CCITT Group 3 2-D
- CCITT Group 4
- JBIG (bitonal and gray scale)
- JPEG 2000
- JPEG (Windows), Progressive JPEG
- modified Group 3
- Packbits Compressed
- PCX compressed
- PDF
- uncompressed byte-aligned
- uncompressed double-word-aligned
- uncompressed word-aligned
- *and more...*

In addition, the images can be in single or multiple strips, one or more files, and in any bit order. Used with PixTools/Scan, the library provides scan-and-rotate functionality for 11” wide scanners. By scanning in “landscape” mode and rotating on-the-fly, performance can be increased by up to 20%. The View rotation capability allows handling over 200 pages per minute.

## PRODUCT CONTENTS

PixTools technology is provided in the form of toolkits that include:

- software libraries
- documentation
- sample source code
- engineering support via phone, fax, and Internet

Our developer support group will work with you throughout your project to help you get your application up and running. After development is complete, we’ll continue to keep you up to date with information on crucial upgrades and new technology.

Contact us today for a free demo of PixTools/View!

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