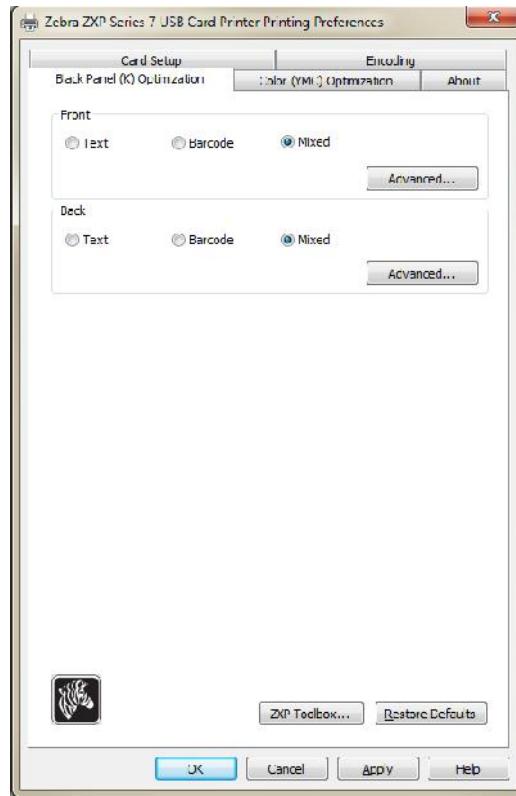


## Black Panel (K) Optimization Tab

The Black Panel (K) Optimization tab displays two identical adjustment sections (Front and Back) to optimize black panel printing for the type of image being printed.

To access the Black Panel (K) Optimization Tab, select *Start > Devices and Printers*. Right click on the *Zebra ZXP Series 7 Card Printer* listing, and select *Printing preferences > Black Panel (K)*. The front side and back side options are enabled based on the availability of K panel in the ribbon combination.



- **Optimize for:** Black panel printing can be optimized to improve the quality of individual elements that comprise the image. There are separate optimization settings for Text, Barcodes, and Mixed content.
  - **Text** sharpens the edges of fonts. This setting will make barcodes appear darker.
  - **Barcode** sharpens fine lines to improve barcodes for scanning. This setting will make text and graphics appear lighter.
  - **Mixed** (default) combines the optimum settings for text, barcode, and graphics printing in most applications.

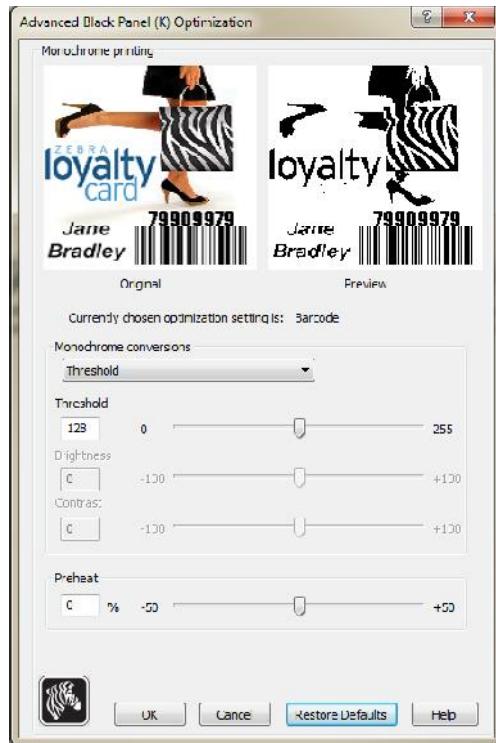
Click on the **Advanced** button for additional black (K) panel optimization options to further fine tune black (K) panel printing; see next page.

## 4: Printer Settings and Adjustments

### Printing Preferences

#### Advanced Black Panel (K) Optimization

The Advanced Black Panel (K) Optimization tab optimizes black panel printing for the type of image being printed; i.e., text, barcode, or mixed.



- **Monochrome conversions:** This section is used to control multi-tone printing when using a monochrome ribbon. The available options are *Dither error diffusion* (default), *Dither 6x6 halftoning*, and *Threshold* (also known as *Dither pure black on white*); see next page for details.
- **Controls:**
  - **Threshold** sets the transition point between black (0) and white (255); i.e., pixel values less than the threshold value would be black, and pixel values greater than the threshold value would be white.
  - **Brightness** controls overall the brightness of the image. Move the slider to the right to lighten the image or to the left to darken the image.
  - **Contrast** controls the difference between the light and dark areas of the image. Move the slider to the right to increase the contrast and vice versa.
  - **Preheat** controls the intensity of the image. Increase the value to enhance edges. Reduce the value if bleeding is present. Note that the Preheat setting does not affect the preview image but is applied to the image during the printing process.

## Monochrome Conversion

The monochrome panels in the ribbon can only print binary (pure on or off) images. Monochrome conversion is used to convert continuous tone 8-bit-per-pixel RGB or gray image content into binary 1-bit-per-pixel content.

- **Color Image**

The sample image to the right is the original color image used to make the following monochrome conversions.



- **Dither error diffusion (default)**

Error diffusion is a dithering technique to convert full color or gray images into a binary image that when printed simulates having a continuous tone response. The error diffusion technique is usually preferred on pictorial images since it produces a sharper and more detailed image.



- **Dither 6x6 halftoning**

Halftoning is a dithering technique to convert full color or gray images into a binary image that when printed simulates having a continuous tone response. The halftoning technique is coarser looking than error diffusion but does not have the inherent image structure seen with error diffusion.



- **Threshold**

Threshold (also known as *Dither pure black on white*) converts full color or gray images into a binary image by a threshold comparison. If a gray pixel value is above the threshold, it is converted to a white pixel; and if it is below the threshold, it is converted to a black pixel. This method will not simulate shades like error diffusion or halftoning does and is thus not recommended to be used with pictorial content. However, it will accurately preserve straight edges on graphics, barcodes, and text and is the preferred conversion for those types of images.



## SUMMARY

**Error diffusion/halftoning:** Use on pictures. Image content dictates if error diffusion or halftoning would look best. For the majority of time, error diffusion is better.

**Threshold:** Use on text, barcodes, line art, and simple graphics.