

Black Ice Newsletter

Black Ice Software, Inc.

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Phone: (603) 673-1019
Fax: (603) 672-4112
E-mail: sales@blackice.com
www.blackice.com
[ftp.blackice.com](ftp://blackice.com)

Simplify the printer driver's user interface

The Black Ice printer drivers have the most extensive feature set and user interface on the market to satisfy a wide range of requirements. Many of the features are exotic and most users may not need some features such as watermarks, annotations and

different TIFF file options. There are several ways to simplify the user interface and they will be discussed below in detail.

In most cases, the developer would like their end users to use the Black Ice printer driver, which is integrated into their product,

as simply as possible and only use the features they need. The Black Ice Printer Drivers include several methods of restricting access to specific controls and functionality as desired by the developer. These methods in-

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Printer Driver Installation tips

How to set the printer setting for all users using the INI file

Windows 2000 and XP operating systems allow each user to have their own printer settings. Each printer driver also has so called default settings. The default settings are used by the system to create the

initial settings for new users who have never used that particular printer. The default settings can be set using the printer driver's INI file. At install time the printer driver will read the settings from the INI file and will use those settings as the default. If a setting is not specified in the INI file, or the specified value

is incorrect, the printer driver will use the setting that is hardcoded in the driver.

If a user has already changed his printer settings, the operating system will have already saved the printer settings for that user. Only the user, through the printer prefer-

(Continued on page 2)

Document Imaging Effect and Filter Functions

What is image filtering?

Filtering of an image means replacing the pixel values with new ones computed from only the original pixel value, the original pixel value and the local neighboring pixels, or the original pixel value

and the global image properties such as histogram. The Document Imaging SDK presents many filter features for 1, 8 and even 24 bit per pixel grayscale and color images compartmentalized to filtering groups.

What is image filtering good for?

The three typical goals of image filtering are:

- Quality improvement such as correction of

(Continued on page 3)

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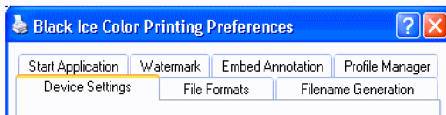
(Simplify the printer... - Continued from page 1)

clude:

I. Hiding the user interface tabs

The current version of the Black Ice printer drivers has seven 'tabs' on the user interface:

Device Settings



Picture 1

File Formats

Filename Generation

Start Application

Watermark

Embed Annotation

Profile Manger

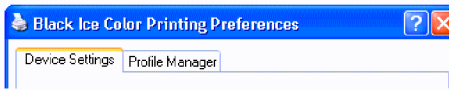
Since all of the printer settings can be read or changed programmatically, it is possible that developers may want to hide one or more of the unnecessary tabs. Even if the tabs are not shown for the end user, the developer can manipulate the printer settings programmatically from their application or simply set the required settings at installation time.

The tabs can be hidden through the INI file used by the printer driver. In order to hide a tab, set the value associated to the tab to 0. If the value is not zero or the value is not specified in the INI file, the tab will be shown. The following example will display only the Device Settings (this

is the only tab that cannot be hidden) and the Profile Manager tab.

```
[UI Tabs Settings]
Display File Format Tab=0
Display Filename Generation Tab=0
Display Start Application Tab=0
Display Watermark Tab=0
Display Annotation Tab=0
Display Profile Manager Tab =1
```

There are several advantages to hid-



Picture 2

ing tabs. For example, this way the developer can be sure that the user can generate only the file formats supported by his application, which could save hours of frustration for both the user and the developer's technical support department.

II. Hiding controls

It is possible to hide unnecessary controls from each printer driver dialog. This can be useful when some of the controls on a specific tab are needed on the user interface and therefore the whole tab cannot be hidden.

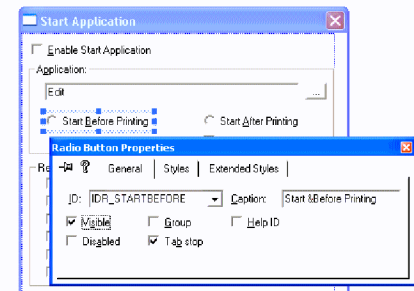
The source code of the Resource dll is included in the Resource Toolkit (RTK). The Resource dll can be compiled using Microsoft Visual C++ 6.0 or higher. The developer can hide controls and/or can move controls and in this way change the user interface to fit the needs of the application that integrates the printer

driver.

In order to hide a control, open the resource dll project (BI_RES.DSP) using Visual C++. The project is located in the ResourceDLL\ folder in the directory where the RTK was installed.

Open the dialog box resource you would like to modify and right click on the control you want to hide. Uncheck the 'Visible' checkmark in order to hide the control.

The controls on the user interface are



Picture 3

disabled/enabled (gray/available) programmatically by the printer driver. Black Ice recommends hiding the unnecessary controls instead of disabling them, because at runtime, the printer driver may enable the controls. However, if a control was hidden it will not appear for the users.

Rebuild the Resource dll by selecting the project setting matching your driver to make sure that the dll has the proper file name.

Read more tips in the next issue of the Newsletter.

(PrinterDriver Instal... - Continued from page 1)

ences dialog box, can modify the printer settings at this point. When a printer is uninstalled from the system, the operating system will not remove the user specific printer settings and therefore even if you change the default settings at install time, users who have already used the printer will keep their previous settings. This is a well known issue

with all printers and can cause havoc during the development of the setup program. In order to test your customized installation, we recommend that you do one or both of the following:

1. Install the printer driver on a clean machine and check if the desired settings specified in the INI file are applied (double check that you are not overwriting the settings from the In-

stall Shield script with something else).

2. Create a new user after the printer is installed, log on as the new user and check that the printer settings are the same as those specified in the INI file.

TIP: Always double check that the flags value is set correctly because if it is incorrect, the printer driver will use the default settings that are hard-coded in the driver.

(Document Imaging ...- Continued from page 1)

noise, corrupted, low or high exposed, images, etc.

- Retrieving special information (e. g. geometrical features) of images such as edge detection and binary hit-miss filters.
- Simulation of external effects such as frequency high and low pass filters and motion blur.

Effect and Filter Groups in Document Imaging

- **Adaptive Filters:** These filters are typically used for noise removal. The adaptivity of these filters is based on the fact that the filter is not using just one or more exact parameters but instead some retrieved information of the parameter specified pixels are also tuning the filtering algorithm. There are 2 adaptive filters available and they are Adaptive-DW-MTM and Adaptive MMSE filters.
- **Artistic Filters:** The artistic filters don't have an exact goal. These filters have different properties, can be used for anything from filtering on histogram to generating motion blur on images. There are 8 artistic filters available and they include Auto Contrast, Motion Blur, Posterizing, and more.
- **Edge Detector Filters:** These filters are used for retrieving edge information from the input images. Three complex edge detectors are presented, all of them can be used to detect the edges of different objects from geometrical

figures to human faces. There are 3 edge-detector filters available and they are Marr-Hildreth, Canny and Shen-Castan edge detectors.

- **Morphological Filters:** Morphological filters are usually used to filter binary images (some cases grayscale 8 bit per pixel images). Morphological filtering are typically used to remove noise or improve quality of scanned fax pages, writings, drawings, etc. There are 10 morphological filters available and they include Dilation, Erosion, Closing, Opening, Hit-Miss, Skeletonizing, Top-Hat, and more.
- **Nonlinear Filters:** These filters are typically used to remove several types of noise corrupting the input image. Due to their nonlinearity, these filters are usually slower than the other filters, but a well chosen and well parametered nonlinear filter can achieve very good results in noise removing. There are 11 nonlinear filters available which include several types of Mean filters, Median filter, Weighted Median filter, and more.
- **Spatial Filters:** This filter group contains the linear filters which can be used to remove noise, to enhance or smooth edges, or to find edges on the image. There are 9 spatial filters available and they include Low and High pass filters, Gradient, Laplace, Uniform filters, and more.
- **Spatial Frequency Filters:** This is a very special filter group which contains the frequency filter func-

tions. Frequency filters are filtering in frequency domain, first they compute the spectra of the image, then they filter the spectra, and finally compute the resulting image from the filtered spectra. There are 7 spatial frequency filters available and they are Low and High pass filters, Enhance, Homomorphic, Inverse, Wiener filters and Fast Fourier transformation.

The filters of the Document Imaging SDK/ActiveX are implemented in one dynamic library (bifilter.dll). All of the filters can be used by giving the parameters of the filtering, and all of them can show a preview dialog. It's important to note that if a filter uses information of the whole image (global filtering), it is possible that the result of filtering will be different from the filtered cropped image of the preview dialog.



User privilege issues using the printer driver

A. In order to install or uninstall the printer driver, the user must have administrative privileges. On Windows

XP/2000/NT only the administrator can add a printer driver to the system.

B. The system administrator can deny access rights to the printer for certain users or groups. If a user or

group doesn't have access rights to the printer, the controls on the printing preferences window will be disabled (grayed) and they cannot change the printer settings.

Inside

Printer drivers: How to simplify the user interface

Time to upgrade?



Latest Version Numbers

Programming Tools			Impact Products		
Product	Version	Date	Product	Version	Date
Fax C++/ActiveX/COM	9.18	08/20/03	Impact Fax Server	4.36	12/18/02
Voice C++/ActiveX/COM	9.18	08/20/03	Impact Voice Mail Server (Standard)	3.14	04/11/01
ColorPrinter Driver for Win95/98/ME	5.57	07/28/03	Impact Voice Mail Server (Deluxe)	3.79	04/11/01
Metafile Printer Driver for Win95/98/ME	5.57	07/28/03	Impact Terminal Fax Server	4.34	05/03/02
Mono Printer Driver for Win95/98/ME	5.57	07/28/03	Impact Fax on Demand	4.06	12/01/00
PDF Printer Driver for Win95/98/ME	5.57	07/28/03	Impact Fax Broadcast	3.04	08/01/03
Mono Printer Driver for NT/Win2000/XP	8.12	08/31/03	Impact ColorFax	5.01	02/21/03
Color Printer Driver for NT/Win2000/XP	8.12	08/31/03	Drag and Drop Printing	2.00	12/24/02
Mono Printer Driver for NT/W2K/XP	8.12	08/31/03	Internet Tools		
Metafile Printer Driver for NT/W2K/XP	8.12	08/31/03	Print2Email	3.01	01/20/03
PDF Printer Driver for NT/W2K/XP	8.12	08/31/03	Tiff Viewer Plug-in - Complete	5.01	06/26/03
Terminal Server Printer Driver Win2003	8.12	08/31/03	Print Monitoring Server	2.20	09/05/03
Tiff SDK/ActiveX/COM	10.0	09/20/03	Free Software		
Annotation SDK/ActiveX/COM	10.0	09/30/03	ColorFax LITE	5.01	02/21/03
Cover Page Generator for Imaging SDKs	10.0	09/20/03	Tiff Viewer Plug-in - Free Version	5.00	03/26/03
PDF Plug-in for TIFF SDK	10.0	09/30/03	ModemWeasel	2.00	08/01/02
Image SDK/OCX	10.0	09/20/03			
Document Imaging SDK	10.0	08/03/03			