

# Two Pilots Virtual Printer

version 11.0

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## Getting Started

Virtual Printer Driver is a packaged software that allows to convert a printable document to raster or vector formats by printing through a printer driver. To use our driver you need to install it from an MSI package ([x86](#) and [x64](#) builds), the driver supports Windows XP and later. After the installation completed, you can configure various driver settings such as:

- Paper size, print quality, paper orientation;
- Raster and vector formats settings;
- Output directory, FTP server, redirect, watermarks, applications.

For configuration, use **Properties** utility from the driver group in the Start menu or registry settings.

The main driver setting is a path to the application that is run after each print job processing completed. This application is further referred as **the client application**. After a print job is completed, the driver generates the INI file that contains paths to output files (BMP, PDF and so on) and runs the client application passing the INI file path to it using a command line parameter, WM\_COPYDATA message or a named pipe. You can set the path to the client application using **Properties** utility or by setting a registry key.

## Environment variables and custom variables

Using System environment variables, output directory or output file name can be configured. Virtual Printer Driver supports all of them that can be specified with %variable\_name% template. In addition to System environment variables, Virtual Printer Driver supports custom variables that can be specified with {variable\_name} template. For example, output directory “%TEMP%/{yyyy}/{device}” will expand to “C:/Users/John/AppData/Local/Temp/2017/Two Pilot Demo Printer” directory.

Here is the list of supported custom variables:

Custom variables	
Name	Description
{device}	Device name
{user}	User name
{machine}	Machine name
{document}	Document title
{yyyy}	Year
{yy}	Year, last two digits
{M}	Month
{MM}	Month with leading zero

Custom variables	
Name	Description
{D}	Day
{DD}	Day with leading zero
{h}	Hour
{hh}	Hour with leading zero
{m}	Minute
{mm}	Minute with leading zero
{s}	Second
{ss}	Second with leading zero
{job}	Print job ID
{job05}	Print job ID with leading zero
{page}	Page number
{page03}	Page number with leading zero
{sid}	User session ID

## Agent

Agent is a Windows service which allows to communicate between Virtual Printer Driver and client applications. In services list it named as **VPDAgent**. By default Agent calls applications with a logged on user permission rights who prints documents. If Virtual Printer Driver shared via local network or domain you should use **Allow guest session** or **Allow domain session** options for allowing to call an application with a current logged on user permission rights. If Virtual Printer Driver installed on a print-server and there are no logged on users you should use **Allow self session** which allows to call applications with Agent service permission rights without any interactives (GUI).

By default, Agent scheduler uses pool size with 8 simultaneous threads, one thread – one print job. You can change this value by passing “**-poolSize X**” command line parameter via VPDAgent service property “Start parameter:”, where “X” is a required pool size.

Agent settings are stored in the following registry key:  
 «HKLM\Software\REGISTRY\_ENTRY\Agent»

## Agent Settings

HKLM\Software\REGISTRY_ENTRY\Agent				
Option name	Type	Description	Value	Default value
Allow guest session	REG_DWORD	This option enables execute applications with current logged on user permission rights if Guest session was detected.	0 – disable 1 – enable	0
Allow domain session	REG_DWORD	This option enables execute applications with current logged on user permission rights if Domain session was detected.	0 – disable 1 – enable	0
Allow self session	REG_DWORD	This option enables execute applications with the Agent service permission rights (SYSTEM by default) w/o any GUI.	0 – disable 1 – enable	0

# Applications

Application is an executable file (exe-file) which called by Agent service during a processing of a print job. There are two types of applications: **preconverter** and **postconverter**. **Preconverter** allows to handle EMF files before processing to other formats. **Postconverter** allows to handle a result of EMF files processing to BMP, JPEG, TIFF, PNG, TEXT or PDF formats.

## Preconverter

Using the **preconverter** you can modify or remove the EMF files in print job and alter conversion settings. When the driver runs the **preconverter**, this information is available:

- document name
- job id
- machine name
- user name
- print resolution
- paper orientation
- paper size
- bin name
- pages
- EMF files

Using this data the preconverter can stop or resume the print job. To resume the print job the preconverter should put this section in the ini-file:

**[Preconverting]**  
**Status = resumed**

To cancel the print job, this section:

**[Preconverting]**  
**Status = canceled**

Preconverter settings are stored in the following registry keys:

«HKCU\Software\REGISTRY\_ENTRY\Application\Preconverter»  
«HKLM\Software\REGISTRY\_ENTRY\Application\Preconverter»

## Postconverter

**Postconverter** (or **the client application**) is started at the end of the print job processing. When the driver runs the **postconverter**, this information is available:

- document name
- job id
- machine name
- user name
- print resolution
- paper orientation
- paper size
- bin name
- pages
- full paths to EMF, BMP, TIFF, JPEG, PNG, TEXT, PDF files.

**Postconverter** settings are stored in the following registry keys:  
 «HKCU\Software\REGISTRY\_ENTRY\Application\Postconverter»  
 «HKLM\Software\REGISTRY\_ENTRY\Application\Postconverter»

## Application Settings

HKLM\Software\REGISTRY_ENTRY\Application\Preprocessor {HKLM, HKCU}\Software\REGISTRY_ENTRY\Application\Preconverter {HKLM, HKCU}\Software\REGISTRY_ENTRY\Application\Postconverter				
Option name	Type	Description	Value	Default value
Enabled	REG_DWORD	This option enables component.	0 – disable 1 – enable	0
Early Access	REG_DWORD	Execute application at spooling time and notify about changes in run-time. Works only with WM_COPYDATA and named pipe <b>Transfer Mode</b> .	0 – disable 1 – enable	0
Executable File	REG_SZ	Full path to the application, may include system environment variables.		
Transfer Mode	REG_DWORD	Type of the communication between Agent and component application.	0- through the command line 1- through the WM_COPYDATA 2- none 3- through the named pipe	
Skip Mode	REG_DWORD	This option enables to skip component application call for EMF/RAW data.	0 - allows application call for EMF/RAW 1- disable application call for EMF 2- disable application call for RAW	0
Window Title	REG_SZ	Title of the component application window.		
Timeout	REG_DWORD	Timeout value in ms after the component application launch.		
Window Class	REG_SZ	Class of the component application window.		
Message Id	REG_DWORD	Unique numeric value to identify that the notification message has been received from the printer driver. For the WM_COPYDATA transfer mode this value represents dwData member of COPYDATASTRUCT structure.		
Notify All	REG_DWORD	Notify all top-level windows with WM_COPYDATA message.	0 – don't notify 1 – notify	0
Pipe Name	REG_SZ	Unique pipe name for ini-file transfer to the component application.		
Pipe Message Size	REG_DWORD	Pipe message size.		
Pipe Launch Application	REG_DWORD	This option allows to launch the component application or skip it.	0 – don't launch an application 1 – launch an application	

## Early Access

**Early Access** allows to receive information from Virtual Printer Driver in run-time. In this mode, Virtual Printer Driver sends to the Application packages with required information. Packages sends according to the next scheme:

- The first package contain a path to the INI-file and a “Document” section of the INI-file contain “Status” equal to “Spooling”:

[Document]

Status = Spooling

- The second and all the next packages contains paths to converted files with zero ('\0') as delimiter and double zero at the end of the package. For example, “printer name\0job id\0c:\Output\result.emf\0c:\Output\result.bmp\0c:\Output\result.png\0\0”. Paths to multipage formats (TIFF, PDF and Text) sends before the last package;

- The last package contain path to INI-file and the “Document” section of the INI-file contain “Status” equal to “Printed”:

[Document]

Status = Printed

To enable “**Early Access**” you should add “Application/Postconverter/Early Access”, REG\_DWORD value and set to “1”.

## Converter

**Converter** performs conversion of EMF files to BMP, JPEG, TIFF, PNG, TEXT or PDF formats. If a source format is ESC/POS, it is converted to the EMF first, then to other formats. Also converter allow to add graphical and textual watermarks to produced files, redirect a print job to other printer or upload produced files to FTP/SFTP/FTPS server. All produced files are stored in the **output directory**.

**Converter** settings are stored in the following registry keys:

«HKCU\Software\REGISTRY\_ENTRY\Converter»

«HKLM\Software\REGISTRY\_ENTRY\Converter»

Target format settings for BMP, JPEG, TIFF, PNG, TEXT, PDF, POS, FTP, WATERMARKS and REDIRECTION are stored in corresponding subkeys.

## Converter Settings

{HKLM, HKCU}\Software\REGISTRY_ENTRY\Converter				
Option name	Type	Description	Value	Default value
Threads	REG_DWORD	This option sets thread pool size for emf2bmp/jpeg/png/tiff/pdf converters.		2
Cleanup Output	REG_DWORD	Cleanup output directory after processing.	0 – do not cleanup 1 – cleanup	0
Show Progress	REG_DWORD	This options enables show or hide progress bar.	0 – disable 1 – enable	1
Output Directory	REG_SZ	Path to the output directory, may include system environment variables and custom variables.		
File name mask	REG_SZ	Mask for the output file name, may include custom variables.		{yyyy} {MM} {DD} {hh} {mm} {ss} {job05} {page03}
Pages Per Sheet	REG_DWORD	Number of pages per sheet.	1 – one page per sheet 2 – two pages per sheet 4 – four pages per sheet 6 – six pages per sheet 9 – nine pages per sheet 16 – sixteen pages per sheet	1
Draw Borders	REG_DWORD	Draw borders for each page per sheet.	0 – do not draw 1 – draw	0

## EMF

{HKLM, HKCU}\Software\REGISTRY_ENTRY\Converter\EMF				
Option name	Type	Description	Value	Default value
Enabled	REG_DWORD	This option enables producing of BMP files.	0 – disable 1 – enable	0

## BMP

{HKLM, HKCU}\Software\REGISTRY_ENTRY\Converter\BMP				
Option name	Type	Description	Value	Default value
Enabled	REG_DWORD	This option enables producing of BMP files.	0 – disable 1 – enable	0
Bits per pixel	REG_DWORD	This option sets color quality (bits per pixel) of BMP images.	1 – 1bpp (black and white) 4 – 4bpp color (16 colors) 8 – 8bpp color (256 colors) 24 – 24bpp	24
Grayscale	REG_DWORD	This option sets BMP to 8bpp grayscale mode. If enabled <b>Bits per pixel</b> parameter is ignored.	0 – grayscale mode off 1 – grayscale mode on	0
Dithering	REG_DWORD	Dithering algorithm to use for conversion of color images to 1-bit black&white images. The algorithms differ by speed and quality.	0 – Floyd-Steinberg 1 – Ordered-Dithering (4x4) 2 – Burkes 3 – Stucki 4 – Jarvis-Judice-Ninke 5 – Sierra 6 – Stevenson-Arce 7 – Bayer (4x4 ordered dithering)	0

## PNG

{HKLM, HKCU}\Software\REGISTRY_ENTRY\Converter\PNG				
Option name	Type	Description	Value	Default value
Enabled	REG_DWORD	This option enables producing of PNG files.	0 – disable 1 – enable	0
Bits per pixel	REG_DWORD	This option sets the color quality (bits per pixel) of PNG images.	1 – 1bpp (black and white) 4 – 4bpp color (16 colors) 8 – 8bpp color (256 colors) 24 – 24bpp	24
Grayscale	REG_DWORD	This option sets PNG to 8bpp grayscale mode. If enabled <b>Bits per pixel</b> parameter is ignored.	0 – grayscale mode off 1 – grayscale mode on	0
Dithering	REG_DWORD	Dithering algorithm to use for conversion of color images to 1-bit black&white images. The algorithms differ by speed and quality.	0 – Floyd-Steinberg 1 – Ordered-Dithering (4x4) 2 – Burkes 3 – Stucki 4 – Jarvis-Judice-Ninke 5 – Sierra 6 – Stevenson-Arce 7 – Bayer (4x4 ordered dithering)	0

## JPEG

{HKLM, HKCU}\Software\REGISTRY_ENTRY\Converter\JPEG				
Option name	Type	Description	Value	Default value
Enabled	REG_DWORD	This option enables producing of JPEG files.	0 – disable 1 – enable	0
Grayscale	REG_DWORD	This option sets JPEG to the grayscale mode.	0 – grayscale mode off 1 – grayscale mode on	0
Quality	REG_DWORD	This option sets the JPEG quality.	Must be in range from	80

**{HKLM, HKCU}\Software\REGISTRY\_ENTRY\Converter\JPEG**

Option name	Type	Description	Value	Default value
			0 (min size) to 100 (max quality)	

## TIFF

**{HKLM, HKCU}\Software\REGISTRY\_ENTRY\Converter\TIFF**

Option name	Type	Description	Value	Default value
Enabled	REG_DWORD	This option enables producing of JPEG files.	0 – disable 1 – enable	0
Bits per pixel	REG_DWORD	This option sets the color quality (bits per pixel) of TIFF images.	1 – 1bpp (black and white) 4 – 4bpp color (16 colors) 8 – 8bpp color (256 colors) 24 – 24bpp	24
Grayscale	REG_DWORD	This option sets TIFF to 8bpp grayscale mode. If enabled <b>Bits per pixel</b> parameter is ignored.	0 – grayscale mode off 1 – grayscale mode on	0
Dithering	REG_DWORD	Dithering algorithm to use for conversion of color images to 1-bit black&white images. The algorithms differ by speed and quality.	0 – Floyd-Steinberg 1 – Ordered-Dithering (4x4) 2 – Burkes 3 – Stucki 4 – Jarvis-Judice-Ninke 5 – Sierra 6 – Stevenson-Arce 7 – Bayer (4x4 ordered dithering)	0
Multipage	REG_DWORD	This option enables generation of multipage TIFF file.	0 – separate TIFF file for every printed page 1 – multipage TIFF file	1
Compression	REG_DWORD	This option sets TIFF compression.	0 – Automatic 1 – None 2 – CCITT modified Huffman RLE 3 – CCITT Group 3 fax encoding 4 – CCITT Group 4 fax encoding 5 – Lempel-Ziv & Welch 7 – JPEG DCT compression 8 – Adobe deflate compression 32773 – Macintosh RLE 32946 – Deflate compression	0

## RAW

**{HKLM, HKCU}\Software\REGISTRY\_ENTRY\Converter\RAW**

Option name	Type	Description	Value	Default value
Enabled	REG_DWORD	This option enables RAW-data storing after printing.	0 – disable 1 – enable	0

## INI

**{HKLM, HKCU}\Software\REGISTRY\_ENTRY\Converter\INI**

Option name	Type	Description	Value	Default value
Enabled	REG_DWORD	This option enables INI-file storing after printing.	0 – disable 1 – enable	0
Duplicate	REG_DWORD	Duplicate INI-file to the output directory for further processing.	0 – do not duplicate 1 – duplicate	0



## FTP

{HKLM, HKCU}\Software\REGISTRY_ENTRY\Converter\FTP				
Option name	Type	Description	Value	Default value
Enabled	REG_DWORD	This option enables files upload via FTP.	0 – disable 1 – enable	0
Url	REG_SZ	URL string like «ftp://colorpilot.com».		
User Name	REG_SZ	User name.		
Password	REG_SZ	Plain-text password.		
Upload	REG_SZ	<p>Information string for uploaded files. String value should be in format (TYPE:DIR:)*, where            TYPE: uploaded files type like            EMF/BMP/JPEG/PDF/PNG/TXT/TIFF            DIR: target directory for upload. Upload directory should exists.</p> <p><b>Sample:</b>            in            «HKEY_CURRENT_USER\Software\Company\Printer\Converter\FTP»            Url=«ftp://colorpilot.com»            Upload=«BMP:.» will upload all BMP files to the            «ftp://colorpilot.com/.» directory i.e. root directory.</p> <p>Upload=«BMP:.;JPEG:jpeg;PNG:other/png» will upload all BMP files to the «ftp://colorpilot.com/.» directory, all JPEG files to the «ftp://colorpilot.com/jpeg/» directory and all PNG files to the «ftp://colorpilot.com/other/png/» directory.</p>		
Encrypted	REG_DWORD	Does user credentials encrypted with AES algorithm or not.	0 – not encrypted 1 – encrypted	0
Attempts	REG_DWORD	Count of attempts for files uploading to the FTP server.		1
Ignore certificate error	REG_DWORD	This option allows to ignore SSL certificate errors for FTPS/SFTP servers with self-signed certificates.	0 – do not ignore 1 – ignore	0

## PDF

{HKLM, HKCU}\Software\REGISTRY_ENTRY\Converter\PDF				
Option name	Type	Description	Value	Default value
Enabled	REG_DWORD	This option enables producing of PDF files.	0 – disable 1 – enable	0
Multipage	REG_DWORD	This option enables generation of a multipage PDF file.	0 – separate PDF file for every printed page 1 – multipage PDF file	1
Produce PDF/A	REG_DWORD	This option enables producing of PDF-A/b files.	0 – disable 1 – enable	0
Timezone	REG_DWORD	This option allows to set timezone for file creation date .	0 – UTC time 1 – Local time	0
Grayscale	REG_DWORD	This option sets text and image color to 8bpp grayscale mode.	0 – grayscale mode off 1 – grayscale mode on	0
Subsetting	REG_DWORD	This option allows to reduce PDF size by creating a subset of a font.	0 – disable 1 – enable	1
Page Layout	REG_DWORD	This option allows to set document page layout.	0 – single page 1 – one column 2 – two column left 3 – two column right 4 – two page left 5 – two page right	0
Page Mode	REG_DWORD	This option allows to set document page mode	0 – none	0

**{HKLM, HKCU}\Software\REGISTRY\_ENTRY\Converter\PDF**

Option name	Type	Description	Value	Default value
			1 – outlines 2 – thumbnail 3 – full screen 4 – optional content 5 – attachments	
Image Quality	REG_DWORD	This option allows to set image quality for PDF files.	range value from 1 to 100	80
Black and White	REG_DWORD	Produce B&W non searchable PDF files.	0 – Searchable colored PDF 1 – Non searchable B&W PDF	0
Security Enabled	REG_DWORD	This option enables a password protection of PDF files.	0- disable 1- enable	0
Encryption Level	REG_DWORD	This option allows to set an encryption algorithm for document password.	0 – none 1 – 40-bit RC4 2 – 128-bit RC4 3 – 128-bit AES 4 – 256-bit AES	0
User Password Enabled	REG_DWORD	This option enables user password protection of PDFfiles.	0- disable 1- enable	0
User Password	REG_SZ	User password.		
Owner Password Enabled	REG_DWORD	This option enables owner password protection of PDF files.	0- disable 1- enable	0
Owner Password	REG_SZ	Owner password..		
Allow Copying	REG_DWORD	Allow copying or extraction a PDF document.	0 – do not allow 1 – allow	0
Allow Commenting	REG_DWORD	Allow form filling, signing or commenting a PDF document.	0 – do not allow 1 – allow	0
Allow Changing	REG_DWORD	Allow changing a PDF document.	0 – do not allow 1 – allow	0
Allow Printing	REG_DWORD	Allow printing a PDF document.	0 – do not allow 1 – allow	0
Title	REG_SZ	PDF document title.		
Author	REG_SZ	PDF document author.		
Producer	REG_SZ	PDF document producer.		
Creator	REG_SZ	PDF document creator.		
Subject	REG_SZ	PDF document subject.		
Keywords	REG_SZ	PDF document keywords.		

**POS**

**{HKLM, HKCU}\Software\REGISTRY\_ENTRY\Converter\POS**

Option name	Type	Description	Value	Default value
Enabled	REG_DWORD	This option enables POS converter.	0 – disable 1 – enable	0
FontA	REG_SZ	Font A name.		Liberation Mono
FontA Size	REG_DWORD	Font A size.		48
FontB	REG_SZ	Font B name.		Liberation Mono
FontB Size	REG_DWORD	Font B size.		34
Skip Header	REG_DWORD	Skip first N bytes from the beginning of a receipt.		0
Specification	REG_DWORD	ESC/POS instructions set.	0 – common set 1 – EPSON set 2 – StarMicronics set	0
Left Margin	REG_DWORD	Specify default left margin in dots.		15

## Redirect

<b>{HKLM, HKCU}\Software\REGISTRY_ENTRY\Converter\Redirect</b>				
Option name	Type	Description	Value	Default value
Enabled	REG_DWORD	This option enables the print redirection.	0- disable 1- enable	0
Type	REG_DWORD	Specify type of files to redirect.	0- Redirect EMF file type 1- Redirect RAW file type (Spool) 2- Redirect POS file type	0
Printer	REG_SZ	Name of printer to redirect to.		
Redirect watermarks	REG_DWORD	This option enables watermarking on redirected documents.	0- watermarks disabled 1- watermarks enabled	0
Left Correction	REG_DWORD	Additional left margin in device units.		0
Top Correction	REG_DWORD	Additional top margin in device units.		0
Right Correction	REG_DWORD	Additional right margin in device units.		0
Bottom Correction	REG_DWORD	Additional bottom margin in device units.		0

## Text

<b>{HKLM, HKCU}\Software\REGISTRY_ENTRY\Converter\TEXT</b>				
Option name	Type	Description	Value	Default value
Enabled	REG_DWORD	This option enables producing of TXT files.	0- disable 1- enable	0
Multipage	REG_DWORD	This option enables generation of a multipage TXT file.	0 – separate TXT file for every printed page 1 – multipage TXT file	1
Encoding	REG_DWORD	This options sets text encoding.	0 – ANSI 1 – Unicode 2 – UTF-8	0
Write BOM	REG_DWORD	This option sets writing of byte-order mark (BOM) at the beginning of Unicode and UTF-8 encoded text file.	0 – BOM off 1 – BOM on	0
Line concatenation interval	REG_DWORD	This option allows to set a width of an interval on axis OY in which two words are in a single line.		5
Word separation interval	REG_DWORD	This option allows to set a minimal separator width between two neighboring words.		1
Debug	REG_DWORD	This option allows to print tokens information at the end of text file.	0 – disable 1 – enable	0
Keep formatting	REG_DWORD	This option allows to keep an original document formatting.	0 – do not keep formatting 1- keep formatting	1
Default Bidirectional Algorithm	REG_DWORD	This option allows to use default bidirectional algorithm.	0 – use inbuild BIDI algorithm 1 – use default BIDI algorithm	0

## Watermarks

<b>{HKLM, HKCU}\Software\REGISTRY_ENTRY\Converter\Watermarks</b>				
Option name	Type	Description	Value	Default value
Enabled	REG_DWORD	This option enables watermarks.	0- watermarks disabled 1- watermarks enabled	0
Quality	REG_DWORD	Image watermarks quality.	range value from 1 to 100	100

**General watermark settings are stored in the following registry key:  
Converter\Watermarks\WatermarkID, where WatermarkID is a unique name of a watermark.**

**{HKLM, HKCU}\Software\REGISTRY\_ENTRY\Converter\Watermarks**

Option name	Type	Description	Value	Default value
Type	REG_DWORD	Watermark type.	0 – image watermark 1 – textual watermark	
Left offset	REG_DWORD	Offset from the left border in logical units.		
Right offset	REG_DWORD	Offset from the right border in logical units.		
Top offset	REG_DWORD	Offset from the top border in logical units.		
Bottom offset	REG_DWORD	Offset from the bottom border in logical units.		
Position mode	REG_DWORD	Position of an origin on a page.	0 – left-top corner of a page 1 – left-bottom corner of a page 2 – right-top corner of a page 3 – right-bottom corner of a page 4 – at the center of a page	

**Image watermark settings**

Image path (Image watermark only)	REG_SZ	Full qualified path to an image watermark.		
Fill mode (Image watermark only)	REG_DWORD	Image position on a page.	0 – none 1 – fill 2 – fit 3 – stretch 4 – title 5 – center	

**Textual watermark settings**

Text (Textual watermark only)	REG_SZ	Text watermark message, may include custom variables.		
Horizontal Alignment (Textual watermark only)	REG_DWORD	Text horizontal alignment on a page.	0 – left 1 – center 2 – right	
Vertical Alignment (Textual watermark only)	REG_DWORD	Text vertical alignment on a page.	0 – top 1 – center 2 – bottom	
Color (Textual watermark only)	REG_DWORD	Text color in 0xBBGGRR format, where BB – blue channel GG – green channel RR – red channel		
Font Name (Textual watermark only)	REG_SZ	Text font name.		
Font Height (Textual watermark only)	REG_DWORD	Text font height.		
Font Width (Textual watermark only)	REG_DWORD	Text font width.		
Rotation (Textual watermark only)	REG_DWORD	Text counterclockwise rotation angel in degreese.		

## Installation Directory Settings

**HKLM\Software\REGISTRY\_ENTRY**

Option name	Type	Description	Value	Default value
Installation Directory	REG_SZ	Full qualified path to the driver installation directory.		

## Properties Dialog Settings

**HKLM\Software\REGISTRY\_ENTRY**

Option name	Type	Description	Value	Default value
About: Hide page	REG_DWORD	Hide About property page.	0 – show 1 – hide	0

HKLM\Software\REGISTRY_ENTRY				
Option name	Type	Description	Value	Default value
General: Hide page	REG_DWORD	Hide General property page.	0 – show 1 – hide	0
Paper: Hide page	REG_DWORD	Hide Paper property page.	0 – show 1 – hide	0
Additional: Hide page	REG_DWORD	Hide Additional property page.	0 – show 1 – hide	0
Application: Hide page	REG_DWORD	Hide Application property page.	0 – show 1 – hide	0
Converter: Hide page	REG_DWORD	Hide Converter property page.	0 – show 1 – hide	0
BMP: Hide page	REG_DWORD	Hide BMP property page.	0 – show 1 – hide	0
EMF: Hide page	REG_DWORD	Hide EMF property page.	0 – show 1 – hide	1
JPEG: Hide page	REG_DWORD	Hide JPEG property page.	0 – show 1 – hide	0
PDF: Hide page	REG_DWORD	Hide PDF property page.	0 – show 1 – hide	0
PNG: Hide page	REG_DWORD	Hide PNG property page.	0 – show 1 – hide	0
Redirect: Hide page	REG_DWORD	Hide Redirect property page.	0 – show 1 – hide	0
TIFF: Hide page	REG_DWORD	Hide TIFF property page.	0 – show 1 – hide	0
TXT: Hide page	REG_DWORD	Hide TXT property page.	0 – show 1 – hide	0
Version	REG_SZ	Product version info for About property page..		

## For Developers

For developers we provide a full set of files and scripts for building their own installation package or incorporate Virtual Printer Driver to their products. We provide set of installation scripts for [Wix Toolset](#) and [NSIS + Inno Setup](#). You will receive your developers package (a.k.a. **Devkit**) after purchase the Virtual Printer Driver. For tests we provide [Devkit](#) for our demo build of Virtual Printer Driver ([x86](#) and [x64](#) builds). Inside the **Devkit** you will find the next directories:

- **files\_full** — set of files for VPD for x86 systems;
- **files\_full\_x64** — set of files for VPD for x64 systems;
- **msi\_installer** — set of files for building MSI package with using [Wix Toolset](#);
- **vpd\_sdk** — set of C++ source files for managing VPD settings.

## Binaries overview

Here is a short description of Virtual Printer Driver and Devkit components.

files_full and files_full_x64 directories	
Component name	Description
EMF2PDF.dll	Our library that provide EMF to PDF conversion. If you do not required in the PDF format you can skip this file in your installation scripts.
fwproc.exe / fwproc_x64.exe	Sends WM_COPYDATA notification to the target application.
Make.iss / Make_x64.iss	<a href="#">Inno Setup</a> installation scripts.
MessageBox.exe / MessageBox_x64.exe	Shows standard Windows message box.

### files\_full and files\_full\_x64 directories

Component name	Description
Microsoft_VC100_CRT_x86.msm / Microsoft_VC100_CRT_x64.msm	Merge modules for Microsoft Visual C++ 2010 Redistributable Package. It uses in MSI package for installing required C-runtime libraries.
pdfmerger.dll	Our library that provides merging for PDF files into one. If you do not required in the PDF format you can skip this file in your installation scripts.
printer.ico	Icon file.
progress.exe	Shows progress during the files conversion.
properties.exe	Shows settings dialog for VPD.
README.pdf	This file.
SampleClient.exe / SampleClient_x64.exe	Sample client application that shows content of INI file after processing. You should use this sample as a start point of your application. Source code for this application available here: <ul style="list-style-type: none"> <li>• <a href="#">C++ source code</a>;</li> <li>• <a href="#">C# source code</a>.</li> </ul>
setupdrv.exe	Installs driver components of VPD.
SetupPrn.nsi / SetupPrn_x64.nsi	<a href="#">NSIS</a> installation scripts.
srvinst.exe / srvinst_x64.exe	Installs VPDAgent service.
stdnames_7x{32, 64}.gpd \${PREFIX}.gpd \${PREFIX}.ini \${PREFIX}pm.dll \${PREFIX}ui.dll unidrv_7x{32, 64}.dll unidrv_7x{32, 64}.hlp unidrvui_7x{32, 64}.dll unires_7x{32, 64}.dll	VPD components that allows to install VPD as a printer driver. \${PREFIX} is a custom file prefix, for example, for our demo build it equals to «tpdps».
\${PREFIX}.lng	Localization file for <b>properties.exe</b> tool. You can add or remove localization language here.
vc redistrib_2010_x86.exe / vc redistrib_2010_x64.exe	Microsoft Visual C++ 2010 Redistributable Package. It uses in <a href="#">NSIS</a> scripts for installing required C-runtime libraries.
vpd_sdk.dll	Our SDK that provides API for Virtual Printer Driver settings. You can find source code for C++ in <b>Devkit</b> .
VPDAgent.exe / VPDAgent_x64.exe	Windows service with name VPDAgent.
vpdisp.exe	Converter tool for converting EMF files to raster or vector formats.

### msi\_installer directory

Component	Description
VPDInstaller.sln	Microsoft Visual Studio solution for building MSI package. <a href="#">Wix Toolset</a> required.
License.rtf	Our license file. You should replace it with your own or skip it.
make_msi_x86.bat / make_msi_x64.bat	Batch files for building MSI package with using tools from <a href="#">Wix Toolset</a> .

msi_installer directory	
Component	Description
VPDInstaller.wixproj	Microsoft Visual Studio project for MSI package. <a href="#">Wix Toolset</a> required.
Config.wxi Product.wxs ProductComponents.wxs ProductTempComponents.wxs RegistrySettings.wxs Shortcuts.wxs	<a href="#">Wix Toolset</a> installation scripts.

vpd_sdk directory	
Component name	Description
vpd_sdk.sln	Microsoft Visual Studio solution for VPD SDK.
doc/doxygen.config	<a href="#">Doxygen</a> config for building VPD SDK documentation.
include/*.h	C++ header files.
source/*.cpp	C++ source files.
vpd_sdk/vpd_sdk.vcxproj	Microsoft Visual Studio project for VPD SDK.
vpd_sdk_test/*	Unit tests for VPD SDK. <a href="#">Googletest</a> required.

## Building MSI package

We provide sample scripts for building MSI package with using [Wix Toolset](#). You should download and install Wix Toolset package. For this tutorial we use [Wix v3.8 \(Stable\)](#) version. Online documentation for Wix Toolset v3.\* available [here](#).

There are two ways of building MSI package:

- with using Microsoft Visual Studio;
- with using Wix tools.

### Using Microsoft Visual Studio

Here is a short brief of building our sample with using Microsoft Visual Studio. The detailed documentation «Working in Visual Studio» available [here](#).

Before starting you should install Wix Toolset and Wix Visual Studio Plugin. Open «msi\_installer/VPDInstaller.sln» solution in your **Devkit** package with using Microsoft Visual Studio. Specify target platform «x86» or «x64» in Solution Platforms and build Wix project via «Build → Build Solution». The result MSI package will be placed to «msi\_installer/VPDInstaller/bin» directory.

### Using Wix tools

Here is a short brief of building our sample with using Wix tools. The detailed documentation «Tools and concepts» available [here](#).

Before starting you should install Wix Toolset. Open directory «msi\_installer/VPDInstaller» in your

**Devkit** package. Here you will find two Batch files «make\_msi\_x86.bat» and «make\_msi\_x64.bat» which builds MSI package for x86 and x64 platforms respectively and place it to the «msi\_intaller/VPDInstaller/bin» directory.

## Building executable package

We provide sample scripts for building executable installation package with using [NSIS](#) and [Inno Setup](#) installers. For this tutorial we use [NSIS v2.46](#) and [Inno Setup 5.5.4](#) versions.

Before starting you should install NSIS and Inno Setup installers. For building installation package for x86 platform, you should use files and scripts from the «files\_full» directory of your **Devkit** package. For x64 platform you should use files and scripts from the «files\_full\_x64» directory. Later in the text we will refer to files from «files\_full» directory. You can apply the same things to the files from the «files\_full\_x64» directory.

## NSIS

Open «SetupPrn.nsi» in the favorite text editor and look at the two lines at the beginning of the file:

```
!define PRINTER_NAME "Your printer name"  
!define PREFIX "Your file prefix"
```

Here you should change PRINTER\_NAME and PREFIX defines to your specified. PRINTER\_NAME is a printer name which you have selected after purchase, for demo build you should set it to «Two Pilots Demo Printer»:

```
!define PRINTER_NAME "Two Pilots Demo Printer"
```

The next, you should set PREFIX to your file prefix. Look at the .gpd or .ini file in the «files\_full» directory and place its name as PREFIX. For example, demo build has «tpdps.gpd» and «tpdps.ini» files, so, PREFIX should be «tpdps»:

```
!define PREFIX «tpdps»
```

Save changes and close «SetupPrn.nsi» file. Now, run «makensisw.exe» from the NSIS installation directory and select «SetupPrn.nsi» script from «File → Load script», NSIS will compile script. If all is correct you will receive «SetupPrn.exe» file in the «files\_full» directory. Now you are ready to build Inno Setup script.

## Inno Setup

Before starting you should build «SetupPrn.nsi» script. See previous section.

Open «Make.iss» with using Inno Setup Compiler («Compil32.exe» in the Inno Setup installation Directory) and look at the two lines at the beginning of the file:

```
#define PRINTER_NAME "Your printer name"  
#define REGISTRY_KEY "Your registry key"
```

Here you should change PRINTER\_NAME and REGISTRY\_KEY defines to your specified. PRINTER\_NAME is a printer name which you have selected after purchase, for demo build you should set it to «Two Pilots Demo Printer». This is the same name as in the «SetupPrn.nsi» script.



```
#define PRINTER_NAME "Two Pilots Demo Printer"
```

REGISTRY\_KEY is a registry key for storing VPD setting in the registry which you have selected after purchase, for demo build you should set it to «Two Pilots Demo Printer»:

```
#define REGISTRY_KEY "Two Pilots Demo Printer"
```

Save changes and compile script «Build → Compile» in the «Inno Setup Compiler». If all is correct, you will receive «sample\_installation.exe» in the «Output» directory. This file you can provide to your customers.

## **The Driver Pipeline**

# DRIVER PIPELINE

