



Print Wizard

Print Processing Engine, LPD, DLL, OCX

Technical Description
(version 2.6, February 2003)

Capsule Description

Print Wizard is a body of software from Rasmussen Software, Inc., that processes and prints text. It exists in several forms, in several products. It runs on a Windows PC, but in many cases prints files that originate on Unix/Linux systems.

Print Wizard takes plain text print files and prints them intelligently, automatically fitting them to the page. It can also take text files that contain markup tags similar to HTML, process that input, and create the printout as directed.

Print Wizard can accept files that contain international characters as Unicode data (in UTF-8 form), and print them correctly. It can automatically select fonts that contain the needed characters.

The Need

- Legacy reports, designed for particular printers, won't print correctly on other printers.

- Print jobs must be distributed over networks, even around the world, even with dynamic IP assignment.
- End users may need to customize output formats.
- Web browsers do not do a good job of printing, especially wide reports.
- Users may need to superimpose form images.
- Developers using some programming languages may need to create fancier printout than those languages provide, with font changes, line drawing, pictures, etc.
- Most printers can't handle Chinese, Arabic, Cyrillic, etc.
- Printout must be printed consistently and precisely on many different kinds of printers.
- Print files may use backspaces for underlining or bolding, tabs, and other conventions.
- Any of this output may need to be faxed or emailed, automatically.

The Solution

Print Wizard exists as a) embedded logic in AnzioWin, a Windows-based telnet (terminal



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emulation) program; b) a freestanding Windows program; c) a Windows DLL; and d) an ActiveX object. There is also an LPD server. Other supporting programs may be included.

In every case, Print Wizard receives as input a text file containing data to be printed, and writes out to the Windows printer interface (or in some cases directly to the spooler or the port), or to a fax driver. The text file can be in the Windows character set, in the DOS character set, or in Unicode UTF-8. Print Wizard always tries to print the data in a logical manner, without user intervention.

When Print Wizard receives print jobs containing either PostScript or embedded escape codes, it passes them on transparently to the Windows spooler.

When Print Wizard receives print jobs with plain text (possibly including tabs, backspaces, and formfeeds), it analyzes the print job, determines the number of rows and columns in the job, and scales the printing separately in the horizontal and vertical dimensions in order to automatically fit the job to the page. Special logic handles very short pages on continuous feed printers, making the page only as long as is needed. Optionally, Print Wizard can automatically print wide format jobs in landscape orientation.

Print Wizard defaults to using the Courier New font. It can be configured to use any other font, including printer-resident fonts for speed. While printing, Print Wizard checks to make sure every character exists in the font being used. If not, Print Wizard will search the installed fonts on the PC for any that contain the necessary coverage. Thus you can switch from English to Chinese, for instance, automatically. Print Wizard also has special logic to handle combining diacritics.

If the print job contains HTML or PWML (Print Wizard Markup Language), Print Wizard will parse those tags and print accordingly. Not all of HTML is covered; however, additional tags not found in HTML provide added features, such as paper control, barcodes, and forms overlays.

Output of Print Wizard can go to any printer that has a Windows printer driver. Or, it can be sent to a fax package on Windows. Special provisions allow the output to be faxed to a specified number, using either WinFax Pro or the Windows MAPI interface. If the PC has Adobe Acrobat Writer, Print Wizard can create PDF files and optionally email them.

All control of Print Wizard can be accomplished using ASCII characters (plus return, linefeed, etc.), so print output can be generated in virtually any programming or scripting language.

Operation

Because Print Wizard exists in several forms, there are several ways to operate it:

Passthrough print in AnzioWin	Any character-based application on the host that has passthrough print support can print through AnzioWin's Print Wizard module. Host routines that perform passthrough print are available from Rasmussen Software.
Command-line driven	With a Windows command string, tell Print Wizard to run and print a certain file from the local disk, networked disk, FTP server, or web server.
Despooler mode	Run Print Wizard so it watches a particular directory for files to appear, then prints and deletes each file. The directory can be on any file system visible to Windows, including via Samba or similar.
Listen (JetDirect) mode	Print Wizard emulates an HP JetDirect device, capturing and printing whatever comes in on a specified IP port (e.g., 9100). Various host-side utilities can send this data out.
Follow-me printing	The provided "netprint" utility on the host can send print data in JetDirect protocol to the same IP address as a telnet session is coming from. So printout goes to the same PC the user is logged in from.
LPD	Print Wizard (freestanding) includes PWLPD, an LPD server. Configure the host to have a "remote" printer installed at a particular IP address, and the host will send print jobs to PWLPD at that location.
DLL	The PrintWiz.DLL module can be called from a variety of languages, with as few as 3 calls.
Registered print handler	Print Wizard can configure Windows to invoke Print Wizard when you need to print files with certain file extensions.
OCX (ActiveX)	PrintWiz.OCX is an ActiveX object that can be installed on a PC and invoked by a web page. This allows accurate printing to be "pushed" from a web server.

Most means of invoking Print Wizard allow the user to specify a print initialization file. This is a simple text file that is prepended to the main print job. Typically, it contains markup codes to configure the printing, specifying such things as font, character size, paper size, orientation, form overlay, etc.

PWML Features

Print Wizard Markup Language (PWML) is derived from HTML. Some features of HTML, such as tables and freeform text, are not supported. In other areas, PWML extends HTML. Following is a list of supported features:

Paper size	Letter, legal, etc. X by Y, in inches, cm., etc.
Orientation	Portrait, landscape, auto-rotate
Paper bin	Upper, lower, tractor, etc.
Length	Assumed lines per page (if no formfeeds) Lineage guessing
Linespacing	Vertical increment
Duplex	Vertical, horizontal Left, top
Bitmap overlay	On any printer Stretched to full page BMP, GIF, JPG
PCL overlay	On PCL5 printers Create by printing to disk Can be multi-page
Page margins	Top, left, bottom, right
Multi-column	Column offset, column gutter
Font	Face="name" Face="name1, name2, ..."
Font size	In inches, cm, points, etc.
Font pitch (horizontal)	In inches, points, cm., etc.
Text sizes (HTML style)	SMALL, BIG, H1, etc. Sizes 1 through 7
Text rotation	Any angle
Text effects	Bold, italic, underline
Text positioning	Subscript, superscript
Text color	Black, white, red, etc. By hex RGB value Grayxx
Tabbed alignment	Create columnar reports with variable-pitch fonts
Background color	As in text color
Text placement	Precisely, anywhere on the page
Horizontal lines and rectangles	Size (height) Width Color Outline

	Precise placement, or inline
Image types	BMP, JPG, GIF, WMF, EMF
Image source	Local disk Network disk FTP or HTTP server
Image size	In inches, cm., etc.
Image placement	Can be precise
Image alignment	Top, middle, bottom
Image space	Horizontal, vertical In inches, cm., etc.
Barcode styles	UPCA, UPCE, EAN13, EAN8, 2OF5, CODABAR, CODE11, CODE39, CODE93, CODE128, PostNet
Barcode options	Bearer bars, tall guard bars, caption, guard characters, add check character
Barcode size	In inches, cm., etc.
Barcode rotation	0, 90, 180, 270
Barcode caption	Face (font), size
Character entities	By name By decimal value By hex value

Platform Support

Print Wizard is a 32-bit Windows program, that runs on Windows 95, 98, ME, NT4, 2000, and XP.

Host-end modules are available for most Unix/Linux platforms.

Licensing and Pricing

The freestanding Print Wizard product, containing the Print Wizard program, the PWLPD program, the callable DLL, and several supporting programs, starts at \$99 (US) per PC; each licensed copy can support up to 3 printers at once.

AnzioWin, the Windows-based terminal program, includes Print Wizard logic for use in passthrough print. AnzioWin starts at \$150 per PC.

The Print Wizard OCX (ActiveX) module, for web-based push printing, is licensed per server, starting at \$1500.

More Information

More details, including volume pricing, are available at www.anzio.com. There are also demo versions of the programs, sample documents, and a demo of web push printing.