

Corporate Fonts Format Solutions

There are three multi-platform outline font formats. “Multi-platform” means that the fonts are usable on multiple kinds of computer systems. “Outline font” means that character shapes are described by means of points, which in turn define lines and curves. Outline font image representation is resolution-independent, meaning that outlines, by their very nature, can be scaled to virtually any size.

Font Formats

The characters in an outline font are represented by the dots of the output device, typically either screen pixels or the dots of a laser, ink-jet or wire-pin printer. The process of converting the outline to a pattern of dots on the grid of the device is called “rasterization.”

The three main font formats are:

- 1 | Type 1
- 2 | TrueType™
- 3 | OpenType

Type 1

Type 1 fonts were first developed by Adobe® Systems for use in PostScript™ printers. Type 1 fonts use mathematical Bézier curves to describe character outlines. Because of the large propagation of PostScript printers and high-end output devices, Type 1 fonts are widely used in the graphic design and publishing environments.

Type 1 fonts are “dumb” and take advantage of a “smart” interpreter. This means that PostScript hints tell the rasterizer what features ought to be controlled, and the rasterizer interprets these using its own intelligence.

Scaling PostScript fonts on current versions of the Mac or Windows-based machines essentially requires Adobe Type Manager™ (ATM) software, which handles the rasterizing to the screen, and rasterizes or converts the fonts for non-PostScript printers. Technically, ATM is not required for using PostScript fonts on PostScript printers, but ATM is required to display the fonts accurately on screen at arbitrary sizes.

TrueType™

The TrueType format was developed by Microsoft® Corporation and Apple® Computer for use in their proprietary operating environments to improve the low-quality bitmap fonts originally used in those systems.

The basic difference between TrueType and PostScript fonts is that TrueType fonts are relatively “smarter” than Type 1 fonts and utilize a “dumber” interpreter. Technically, TrueType and PostScript fonts use different kinds of mathematics to describe their curves. TrueType uses quadratic B-splines, which are a subset of the cubic Bézier curves of Type 1 fonts.

People working in a corporate environment almost exclusively use TrueType fonts over Type 1 fonts. First, because their computers come loaded with a large selection of TrueType fonts and second, because TrueType fonts do not require the purchase of additional software to work in a Windows environment.

Agfa Monotype has one of the largest libraries of TrueType and Type 1 fonts and more experience working with these font formats than all other font foundries combined.

OpenType

OpenType was developed jointly by Microsoft and Adobe and is supported by Agfa Monotype's compression technology. OpenType consists of a series of enhancements to the TrueType format. The main goals of OpenType are broader multi-platform support, fonts that have the capacity for large character sets, and improved internet and PDF publishing.

A superset of the existing TrueType and Type 1 formats, OpenType provides support for type both in print and on-screen. Technically, an OpenType font can contain Type 1 outline data only, TrueType outline data only, or both. Type 1 data will be rasterized by a Type 1 rasterizer such as Adobe Type Manager or converted to TrueType data for rasterization by a TrueType rasterizer.

OpenType will also allow type designers and font foundries to create larger fonts. Currently, fonts are limited to 256 characters. If a typeface designer wants to create an extended ligature set, small caps, swash and alternate characters, or characters to support multiple languages, these have to be put into another font. To take advantage of these additional characters, end-users must switch back and forth between the fonts.

Technically, 65,000 characters can be put into one OpenType font. The large character set capacity of OpenType will allow type designers much more latitude in typeface design and will provide the ability to support many different languages from a single font.

OpenType fonts will also contain a "digital signature" that will allow operating systems and browsing applications to identify the source and integrity of fonts—including embedded font files obtained in web documents. In addition, font developers will be able to encode embedding restrictions in OpenType fonts to maintain better control over how their fonts are used.

Conclusion

OpenType may eventually become the defacto standard for font formats, but it will first have to be supported at the operating system level, and applications will need to be re-engineered to take advantage of its more robust features. Although existing font libraries can easily be converted to the OpenType format, it is only through the laborious addition of new features that the greatest value can be added to OpenType fonts.

There are some real differences between PostScript and TrueType—although the relative advantages of each are often exaggerated by the advocates of one or the other format. However, because of the proliferation of Windows-based machines, the corporate environment will continue to depend on TrueType fonts to set, print and display type.

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