PDFDevice Expelled Gremlins

ID :	1988	Fixed in version :	5.0.1.0
Short Description:	PDF Device can't print Segoe UI		

Full Description: When printing via PDF Device, text with Segoe UI font isn't properly displayed, i.e. many of the characters are missing.

Comments : Below is a full description of the problem and the fix we implemented...

BACKGROUND:
TT Font files contain data called glyph outlines for how to draw each character. The outlines are stored in a single blob. An array table called "loca" stored in the font file indexes this blob and specifies the size of the data for each character (or glyph). Traditionally, it was recommended that indexes should be 32bit aligned and it followed mostly that the size of data for each glyph was word aligned. The latest Microsoft documentation still recommends16bit word aligning indexes (Adobe and Microsoft have become bedfellows in font technology whereas it used to be Adobe and Apple, consequently Microsoft are really now behind the font standards or lack thereof). It turns out that many of the glyph sizes for this latest version of Segoe UI are not word aligned as they are odd in size. The glyph sizes are still all word aligned with the version of Segoe UI that comes with Windows 10, hence it is only a problem in Windows 11. Admittedly, the documentation only ever spoke of the indexes being word aligned for performance reasons, but sizes being word aligned had become an unwritten standard because of the old style short "loca" tables of which I will speak next.

PROBLEM:
When embedding subsets of fonts in PDF files (i.e. only embed the glyph data for the characters that are actually used in the document) it was tradition to use a compressed version of an index array that encodes the indexes and glyph sizes as 16bit shorts that are the original index and size divided by two. Of course, if you divide odd sizes, for example 263, by two, you get 131 as an integer, thus dropping the final byte of the glyph data. Consequently, the data appears corrupt to a PDF reader and causes an error message although the complete data is actually embedded.

FIX:
To resolve this, pdfDevice now uses the long indexing method if the original font uses long indexes, as it appears we can no longer rely on the tradition of word aligned glyph sizes in such a case. This was a simple and safe change, although a PDF file may now be a few bytes longer.