Coherent PDF
Lossless PDF Compressor

User Manual

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Coherent Graphics Ltd

For bug reports, feature requests and comments, email
contact@coherentgraphics.co.uk

Typographical Conventions

Command lines to be typed are shown in `typewriter font` in a box. For example:

```
smpdf in.pdf -o out.pdf
```

(Under Microsoft Windows, type `smpdf.exe` instead of `smpdf`). When describing the general form of a command, rather than a particular example, square brackets `[]` are used to enclose optional parts, and angled braces <> to enclose general descriptions which may be substituted for particular instances. For example:

```
smpdf in.pdf -pw <password> -o out.pdf
```

An exception is that we use `in.pdf` and `out.pdf` instead of `<input file>` and `<output file>` to reduce verbosity.

Lossless PDF Compressor

The Coherent PDF Lossless PDF Compressor performs certain rearrangements and optimisations of the internal structure of a PDF file to make it smaller, whilst not modifying it in any essential way. There is a single command-line program `smpdf` (`smpdf.exe` under Microsoft Windows). The rest of this manual describes the options that may be given to this program.

Input and Output Files

To compress a PDF file, give the input and output file names:

```
smpdf <input file> -o <output file>
```

Compression proceeds, and some information is displayed:

```
smpdf PDF32000_2008.pdf -o smaller.pdf
Initial file size is 8995189 bytes
Beginning squeeze: 123847 objects
Squeezing... Down to 114858 objects
Squeezing... Down to 114840 objects
Squeezing page data and xobjects
Recompressing document
Final file size is 8167712 bytes, 90.80% of original.
```

The amount of compression possible is related to the program which produced the PDF, and the contents (text, line art, bitmaps etc.)

Linearization

By default, `smpdf` will not output a linearized file, even if the input was linearized, since linearization always increases the size of a file, and its benefits are marginal in the modern era. To reflect in the output file any linearization present in the input file, add the `-keep-l` flag to the command line.

```
smpdf -keep-l <input file> -o <output file>
```

Note that this requires the external linearization program `cpdflin` to be installed as per the provided instructions.

Encrypted files

PDF files have two passwords: the *owner password*, which allows one to do anything to a PDF file, including removing the encryption. The other, the *user password* confers certain rights. The user password is almost always blank (which explains why one can open "encrypted" PDF files in a PDF viewer without typing a password).

If a PDF file has a non-blank user password, `smpdf` will need it to compress the file. It can be provided with the `-pw` command line flag:

```
smpdf <input file> -pw sesame -o <output file>
```