

Ghostscript and MuPDF Status OpenPrinting Summit May 2017

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Outline



GS/MuPDF Overview

Ghostscript or MuPDF

Recent Updates to Ghostscript

Work underway on Ghostscript

Recent Updates to MuPDF

Work underway on MuPDF



The Basics of GS

Ghostscript is a document conversion and rendering engine.

Written in C ANSI 1989 standard (ANS X3.159-1989)

Essential component of the Linux printing pipeline.

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Source and documentation available at www.ghostscript.com

The Basics of MuPDF

- **A Core Set of Libraries Focused on PDF**

Entirely written in C, very portable, small ROM footprint

Windows/Linux/MacOS/iOS/Android/BB10/QNX/others

- **Example Tools:**

Simple viewers for Linux/Android/MacOS/iOS/Windows/WinRT.

Command line tools:

- Rendering PDF/XPS/Epub pages
- Creating PDF pages
- Merging PDF content
- Extracting pages
- Decompressing content streams
- Extracting resources
- Repairing files

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Ghostscript or MuPDF?



<http://twiki.ghostscript.com/do/view/Ghostscript/GhostscriptOrMuPDF>

For most printing applications - use Ghostscript.

PostScript

PCL

Spot colors

Extreme level of color management control

Massive range of output devices

Ghostscript or MuPDF?

For screen use or embedded devices - use MuPDF.

Fast

PDF Parser in C.

AA Rendering designed in from the ground up.

Small

Much smaller ROM footprint.

Simple

No complex garbage collector to maintain

Small set of dependent libraries

Simpler to port

Interactive features

More suitable for building viewers

Searching

Zooming

Form filling

Transitions

Changes to GS since last meeting

Release 9.21

PDFWrite preserves annotations from input PDFs

GhostXPS interpreter now provides the pdfwrite device with the data it requires to emit a ToUnicode CMap: thus allowing fully searchable PDFs to be created from XPS input

Ghostscript allows setting default color space for PDF transparency blends.

Significant fixes in DeviceN/Transparency/Overprint interaction (Altona tests)

Changes to GS since last meeting

Release 9.21

Ghostscript/GhostPDL configure script now has much better/fuller support for cross compiling.

The tiffscaled and tiffscaled4 devices can now use ETS (Even Tone Screening)

The toolbin/pdf_info.ps utility can now emit the PDF XML metadata.

New scan converter available (currently optional, but will become the default in a near future release). It can be enabled by using the command line option: '-dSCANCONVERTERTYPE=2'.

Provides improved performance with large and complex paths.

Current work in GS



Upcoming Incompatible changes:

Remove deprecated device procedures.

Change device API so every device proc takes a graphics state parameter.

Anyone maintaining a Ghostscript device outside the canonical source tree probably will need to update his/her device(s) when these changes happen.

Devices using only the non-deprecated procs should be trivial to update.

Changes to MuPDF since last meeting

Significant changes in 1.10:

FictionBook (FB2) e-book support.

Simple SVG parser (a small subset of SVG only).

mutool convert: a new document conversion tool and interface.

Multi-threaded rendering in mudraw.

Luratech decoders for JBIG2 and JPEG2000

Updated base 14 fonts from URW.

New CJK font with language specific variants.

Hyperlink support in EPUB.

Changes to MuPDF since last meeting

Reduced memory use: (1.10)

New tool muraster: example printer driver with limited RAM usage and automatic banding.

Alpha channel is now optional in pixmaps.

More aggressive purging of cached objects.

Partial image decoding for lower memory use when banding.

Changes to MuPDF since last meeting

**Reduced code size when building with a subset of features:
(1.10)**

Reduced default set of built-in CMap tables to the minimum required.

FZ_ENABLE_PDF, _XPS, _JS, to disable features at compile time.

Function level linking.

Changes to MuPDF since last meeting

Interface changes and cleanups: (1.10)

Dropped pdf object generation numbers from public interfaces.

Simplified PDF page, xobject, and annotation internals.

Closing and freeing devices and writers are now separate steps.

Improved PDF annotation editing interface (still a work in progress).

Document writer interface.

Banded image writer interface.

Changes to MuPDF since last meeting

Mobile viewers: (1.10)

New JNI interfaces to match capabilities of 'mutool run' javascript.

New Android and desktop java examples using new JNI interface.

Changes to MuPDF since last meeting

Features in 1.11 release:

PDF portfolio support with command line tool "mutool portfolio".

Add callbacks to load fallback fonts from the system.

Use system fonts in Android to reduce install size.

Flag to disable publisher styles in EPUB layout.

Improved SVG output.

Current work in MuPDF

Addition of color management to MuPDF.

Creating a fork of lcms to enable more aggressive multi-threading with the sharing of profiles and links between threads.

DeviceN color support with overprint

Improved transparency rendering.

Use of output intent ICC profile.

More Information



Repositories located at
[git://git.ghostscript.com](https://git.ghostscript.com)

Ghostscript discussions on IRC freenode #ghostscript channel
MuPDF discussions on IRC freenode #mupdf channel

Bug reports
bugs.ghostscript.com

Additional information at www.mupdf.com www.ghostscript.com