



PDFlib Products for Mobile and Embedded Systems

What is PDFlib?

PDFlib is the leading developer toolbox for generating and manipulating files in the Portable Document Format (PDF). PDFlib's main targets are dynamic PDF creation e.g. to implement »Save as PDF« in an existing application. PDFlib products can be deployed on server systems, desktop systems as well as on mobile and embedded devices. PDFlib has proven itself in a wide range of use cases. Application programmers need only decent graphics or print output experience to be able to use PDFlib quickly.

The PDFlib Flagship Product

PDFlib offers all functions for generating PDF documents with text, graphics, images, and interactive elements such as links or bookmarks. Use PDFlib for the following and many other tasks:

- ▶ add »Save as PDF« capability to your application
- ▶ create PDF documents on a Web server in real time
- ▶ create database reports in PDF
- ▶ deliver PDF status reports from any kind of devices
- ▶ take advantage of advanced typography and full Unicode and encoding support for text output
- ▶ advanced color management functionality
- ▶ convert TIFF, JPEG, or other image formats as well as SVG graphics to PDF
- ▶ automatically format tables with all kinds of cell contents
- ▶ create PDF/X-1/3/4/5 documents for commercial printing
- ▶ create PDF/A-1/2/3 for archiving
- ▶ Create PDF/VT for transactional printing
- ▶ create Tagged PDF and PDF/UA for accessibility

A complete list of PDFlib features can be found on our Web site.

Japanese, Chinese, and Korean Text

Eastern Asian markets play an important role for PDFlib GmbH. Our products are successfully marketed in Japan since 2002 and Japanese editions of the PDFlib developer manuals are available. PDFlib supports dedicated features for Japanese text output including the following:

- ▶ full Unicode support as well as support for legacy multi-byte CJK encodings, e.g. Shift-JIS, Big5
- ▶ horizontal and vertical writing mode
- ▶ ideographic variation sequences (IVS) for variant glyphs*
- ▶ EUDC and SING fonts (glyphlets) for Gaiji characters
- ▶ fallback fonts, e.g. for adding Gaiji characters to other fonts
- ▶ advanced text processing with OpenType font features such as simplified or traditional forms, half widths or full widths, etc.

PDFlib Mini Edition

Embedded devices operate under tight memory conditions. Therefore a special PDFlib configuration called Mini Edition (ME) is available for such target platforms. The Mini Edition reduces memory requirements by removing some features which are typically not required on mobile and embedded systems, e.g. the database of Pantone and HKS spot color names and values.

In a typical scenario the PDFlib Mini Edition reduces the size of the library from ca. 5 MB to less than 2 MB. The memory requirements can be further reduced with a custom configuration. i.e. support for a certain feature which is not required can be removed from the library.

Other PDFlib GmbH Products

In addition to the flagship product PDFlib other PDFlib GmbH products are available for mobile and embedded systems as well. Products not mentioned here, e.g. PLOP DS for digital signatures, can be made available on request.

PDFlib+PDI includes all PDFlib functions, plus the PDF Import Library (PDI). With PDI you can open existing PDF documents and incorporate some pages into the PDFlib output.

The PDFlib Personalization Server (PPS) includes PDFlib+PDI plus additional functions for variable data processing using PDFlib Blocks.

PDFlib TET (Text Extraction Toolkit) extracts text, images and meta-data from PDF documents. TET makes available the text contents

of a PDF as Unicode strings along with the position on the page. Raster images are extracted in common raster formats.

Embedded Systems

Embedded Linux

Embedded Linux operating systems run on a great variety of hardware platforms and are often used in industrial environments. Embedded Linux is highly popular among vendors of industry and consumer systems of many kinds, ranging from industrial and measuring equipment to communications devices such as routers and PBXs.

Embedded Linux versions of PDFlib products can be used with C and C++; other language bindings (e.g. PHP) can be made available on request. Some examples:

- ▶ The uClinux Embedded Linux/Microcontroller project is a port of Linux to systems without a Memory Management Unit (MMU). uClinux drives Web cams, network devices, and many other consumer and developer devices. uClinux even operates in space as it was part of NASA's ENose project in the International Space Station ISS. uClinux supports a variety of CPU architectures. PDFlib for uClinux is currently available for the Freescale MCF5329 processor.



- ▶ The QNAP Turbo NAS system is a network attached storage device based on Linux running on a Marvell 5182 CPU with 500 MHz. We used Code Sourcery's CodeBench as development environment. This IDE is based on the common Eclipse and GCC toolchains and supports various CPU architectures, e.g. the ARM-based Marvell CPU.



Other Embedded Operating Systems and CPU Architectures

In addition to embedded versions of Linux a wide variety of other operating systems for embedded systems is in use. PDFlib products can be made available for other embedded operating systems (including Real-time Operating Systems, RTOS) such as Wind River's VxWorks, LynxOS, QNX. Due to the proven code portability PDFlib products run on a wide variety of CPU architectures, including x86, 68000, MIPS, PowerPC, SuperH, and ARM.



Embedded Devices without any Operating System

PDFlib products can be deployed on devices which do not run under control of an operating system or don't offer any permanent storage facilities. For example, all standard I/O operations in PDFlib can be disabled. Input data such as text and images are supplied by the controlling application in memory, and PDFlib creates PDF documents in memory as well. The generated PDF documents can then be transferred via the network.

Please contact PDFlib GmbH or its Embedded Systems Partners if you are interested in using PDFlib products on a particular operating system or CPU architecture.

Mobile Systems

Android

The Linux-based Android operating system is very popular for smartphones and tablets. Android drives hundreds of millions of smartphones from a variety of vendors. Since the operating system itself doesn't offer any PDF features, PDFlib products are very useful on this platform.

Since Android's application development is based on Java, PDFlib products for Android offer a Java programming interface. PDFlib for Android is a JNI wrapper around a native Android library.

Developing PDFlib products requires the Android SDK and an AVD (Android Virtual Device).

iOS for Apple Devices

Apple's iOS operates the mobile devices iPhone, iPod touch and iPad. It is based on OS X/macOS. Similar to OS X it offers only basic PDF functionality, so that for simple tasks no third-party PDF viewer or PDF generation tool is needed. Nevertheless PDFlib products come in handy when advanced tasks are required or generated documents must conform to ISO standards such as PDF/A.

Since application development in iOS is based on Objective C, PDFlib products for iOS offer Objective-C, C and C++ programming interfaces. PDFlib for iOS is delivered as a framework for iOS Applications.

PDFlib products offer many advantages over the built-in PDF features of iOS which support only very basic PDF generation:

- ▶ While iOS supports only PDF 1.4 (the version introduced with Acrobat 5 back in 2001!), PDFlib products support the latest PDF versions up to the format used by Acrobat XI.
- ▶ PDFlib products support all relevant ISO standards for PDF, including ISO 32000-1 (the standardized version of PDF 1.7) and the PDF/A archiving standard.
- ▶ PDFlib products support all flavors of PDF encryption including strong AES-256 encryption, Unicode passwords, and advanced permission settings.
- ▶ PDFlib products can generate Tagged PDF including PDF/UA for improved accessibility and content repurposing.

»Large« Computing Environments

PDFlib products are not restricted to mobile devices and embedded systems, but run on practically all computing platforms. We offer 32- and 64-bit variants for all common flavors of Windows, OS X, Linux and Unix, as well as for IBM iSeries/i5 and zSeries mainframes.

The PDFlib core is written in highly optimized C code for maximum performance and small overhead. Via a simple API (Application Programming Interface) the PDFlib functionality is accessible from a variety of development environments:

COM for use with VB, ASP, etc.; C and C++; Cobol (IBM zSeries); Java, including servlets and JSP; .NET for use with C#, VB.NET, ASP.NET, etc.; Objective-C (OS X/macOS, iOS); Perl; PHP; Python; REALbasic/Xojo; RPG (IBM iSeries/i5); Ruby, including Ruby on Rails;

Benefits of using PDFlib Software

Rock-solid Products

Tens of thousands of programmers worldwide are working with our software. PDFlib products meet all quality and performance requirements for server deployment. All products are suitable for robust 24x7 server deployment and unattended batch processing.

Speed and Simplicity

PDFlib products are incredibly fast – up to thousands of pages per second. The programming interface is straightforward and easy to learn.

PDFlib Products all over the World

Our products support all international languages as well as Unicode. They are used by customers in all parts of the world.

Professional Support

If there's a problem, we will try to help. We offer commercial support to meet the requirements of your business-critical applications. By adding support you will have access to the latest versions, and have guaranteed response times should any problems arise.

Licensing

We offer various licensing programs for server licenses, integration and site licenses, and source code licenses. Support contracts for extended technical support with short response times and free updates are also available.

About PDFlib GmbH

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