



# Adobe PDF Print Engine

The rendering platform for the Adobe PDF print experience



Prepress  
Print Proofing



Textile  
Printing



Industrial  
Printing



Variable Data  
Printing



Production  
Printing



Graphic Arts  
Printing



Large Format  
Printing



Packaging & Label  
Printing

## Key Highlights

- **Color:** Incorporate the latest color imaging science into your product
- **Peak performance:** Maximize the efficiency of available hardware resources
- **Print quality:** Bring the designer's vision to life
- **System integration:** Streamline product development & testing
- **Reliable workflow:** The reliability of an end-to-end Adobe workflow with the industry's top rendering platform

# Print and Adobe

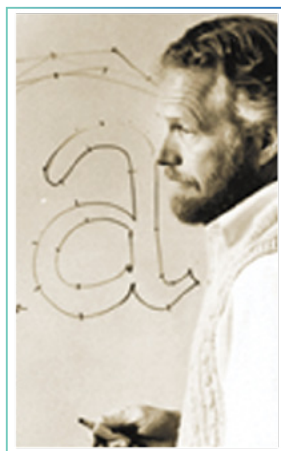


## Revolutionizing printing with innovative technologies, since 1984

As the print landscape continues to evolve, Adobe continues to innovate. Adobe revolutionized printing with the introduction of PostScript in 1984, Portable Document Format (PDF) in 1993, and Adobe PDF Print Engine in 2006. Adobe continues to lead the industry, bringing award-winning, patented technologies to printers around the globe. Our portfolio spans the entire workflow, with products for authoring, managing, and outputting print jobs. Our partners are market leaders in every category, delivering best-in-class solutions for today and tomorrow.

## Adobe PDF Print Engine

Adobe PDF Print Engine is the industry's leading rendering technology that maximizes the print potential of every press. It powers workflows in every industry segment, driving over 200,000 presses and proofers around the globe: offset, gravure, flexographic, inkjet, electrostatic and nanographic. As designers continue to push creative boundaries with the new features in Adobe Photoshop, Illustrator and InDesign, the PDF Print Engine employs the same PDF technology used in Adobe Creative Cloud applications and Adobe Acrobat DC to render them for reliable reproduction on any surface and in any manufacturing process.



# Give your products an edge with Adobe PDF Print Engine



PDF Print Engine is the leading rendering technology for print reproduction. It powers workflows in every industry segment, driving over 200,000 presses and proofing presses around the globe: offset, gravure, flexographic, inkjet, electrostatic, and nanographic. Since 2006, PDF Print Engine has delivered the latest developments in imaging science to commercial printers, in partnership with the world's leading vendors. It enables reliable reproduction of every print job, especially rich graphic content designed in Adobe Creative Cloud applications like Adobe Photoshop, Illustrator, and InDesign. It employs the same PDF technology as Adobe Acrobat DC, ensuring that the final printed product matches customer expectations.



PDF Print Engine is the fastest platform for complex graphics rendering and personalized printing. Graphic artists are continually pushing the design envelope with special effects, which can be computationally expensive. To meet this challenge, Adobe computer scientists continually optimize algorithms in PDF Print Engine to take full advantage of the latest computer processors. Every new version of PDF Print Engine is tested using the latest features in Illustrator, InDesign, and Photoshop, enabling the fastest possible job turnaround time. PDF Print Engine is also highly scalable: Multiple instances can be configured to run in parallel to drive variable data printing at the full rated speed of the digital press.



Everyone benefits when the print workflow employs the same core technology at every stage, from design to approval to final output. PDF Print Engine uses the same PDF technology as Acrobat DC, Photoshop, Illustrator, and InDesign. So when PDF Print Engine is built into your prepress solution, your customers will benefit from greater reliability and fewer errors during the prepress cycle.



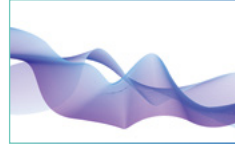
Adobe invented color management for print output (PostScript color rendering dictionaries). Ever since, Adobe color scientists have played a leading role in the International Color Consortium, making several important contributions to the print industry. PDF Print Engine includes the Adobe Color Engine, the same Color Management Module (CMM) used in Creative Cloud applications and Acrobat DC. Whether your solution uses Adobe Color Engine or another Color Management Module, PDF Print Engine incorporates advanced color technologies for efficient and optimal rendering of transparency blending, overprinting, spot colors, trapping, etc.

# Next-generation rendering



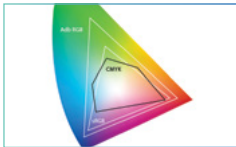
## Live transparency blending

Blends transparent objects to produce attention-getting print effects such as drop shadows, soft edges, and backgrounds. Even when combined with spot colors and smooth shades, transparency is rendered seamlessly for maximum impact.



## Smoother shades

It can be challenging to avoid banding and artifacts when rendering long gradient blends, both axial and radial. With PDF Print Engine, continuous shades are always rendered smoothly.



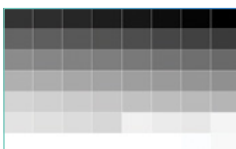
## ICC-based color management

It includes the Adobe Color Engine which can also be integrated with proprietary CMMs (Color Management Modules). Job elements profiled with any combination of color spaces are efficiently combined and converted to the intended print condition, per the output profile.



## 16-bit processing

It processes color planes for images and graphics containing any bit-depth, up to 16 bits per channel, to faithfully render subtle color shifts and achieve absolute color precision.



## PDF 2.0 color capabilities

New color capabilities introduced with PDF 2.0 are fully supported—black point compensation (BPC), spectral data for spot colors (CxF), and page-level output intent.



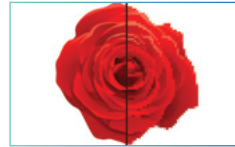
## Built for maximum speed

With a performance-first foundation, PDF Print Engine is the fastest rendering technology for rich graphics and variable data printing (VDP). Rendering algorithms are continually optimized to ensure the fastest output times for complex effects created by the latest features in Adobe Creative Cloud applications.



## PDF/VT for VDP

Adobe initiated the PDF/VT standard to bring the benefits of the PDF workflow to VDP printing. Opaque and transparent repeating artwork can be cached and retrieved in real time. For even faster performance, it can be configured to cache either rasters or display list objects for each element.



## Anti-aliasing

PDF Print Engine can visually smoothen the sharp edges in text and graphics, which is especially helpful at low resolutions.



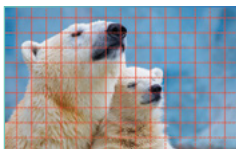
## Mercury RIP Architecture

VDP jobs can be output to the fastest presses in the industry with the Mercury RIP Architecture—a scalable, dynamic platform that maximizes parallel processing on multiple, dedicated CPUs.



## Halftone origin

Identical units in a step-and-repeat job can be anchored and aligned to the pixel grid to ensure consistent screening and an identical halftone appearance for each element.



## Tile Parallel Processing

A large surface can be subdivided into tiles, each of which can be rendered by a separate instance of PDF Print Engine. Rasterized tiles are seamlessly reassembled, resulting in even faster performance for large surfaces.



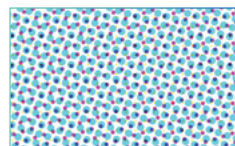
## Inline image processing

PDF Print Engine can be configured for run-time modification of images using any predefined algorithm and metadata inputs.



## 64-bit processing

PDF Print Engine supports only modern 64-bit processor architectures.



## Non-binary halftones

PDF Print Engine can produce accurate 2-bit, 3-bit, and 4-bit output for non-binary halftone screening.



## Optimized compression

PDF Print Engine can distinguish between images, vectors, and unmarked areas down to the pixel level, so the most efficient type of compression can be used for each type of content.



## Tight integration with PDF Library

For systems that include the Adobe PDF Library, PDF Print Engine can invoke it at run time to enable real-time modification of job content immediately prior to rendering.



## JDF-based automation

PDF Print Engine integrates with workflows managed by Job Definition Format (JDF), the industry standard maintained by CIP4.



## Enhanced Unicode support

Control parameters, file paths, and passwords can include multibyte characters.



## PDF Helper

PDF Print Engine includes the PDF Helper utility for dynamic job configuration based on run-time inspection of incoming files (read-only).



## PDF Driver support

PDF Print Engine can accept print streams submitted directly from desktop applications via Adobe PDF Driver. It can also accept PostScript via Adobe PDF Converter.



# Re-define printing with new features

Adobe distributes point releases to solution partners in-between major versions of the PDF Print Engine. Two years after the launch of version 5, Adobe is releasing version 5.5 which introduces important new features that will improve print quality reproduction in packaging and large format printing.

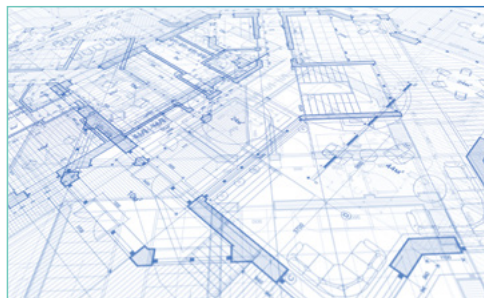
Fine Line Rendering provides a powerful new option for rendering content in job segments like packaging, security printing, mapping and architecture—now available in version 5.5.



Packaging

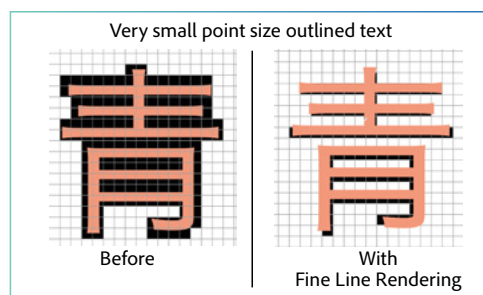


Security Printing



Mapping and Architecture

Text rendering in Adobe PDF Print Engine uses “CoolType”, the same technology used to display text in Creative Cloud applications and Adobe Acrobat DC. However, in some packaging workflows, live text is converted to outlined graphics. To address such jobs, version 5.5 of PDF Print Engine introduces Fine Line Rendering – a new algorithm for rendering graphic elements, including outlined text and barcodes. It produces a lighter, cleaner appearance of very fine lines, and small point size text that has been outlined.



# Mercury RIP Architecture

The Mercury RIP Architecture is a parallel processing framework for dynamically managing multiple instances of Adobe PDF Print Engine, working in tandem on multicore, networked, or cloud platforms. It's a scalability platform optimized for outputting variable data printing jobs to the fastest digital presses on the market today and tomorrow. It's most useful for packaging, industrial, personalized marketing communications, and statements. A Mercury-certified system maximizes hardware efficiency, ensuring the most efficient use of system resources. Processing of jobs, pages, and complete signatures occurs in parallel and can be load balanced, so that no CPUs remain idle while jobs are waiting to be rendered. With the Mercury RIP Architecture, PDF Print Engine can scale up to drive high-volume production on a single press or across multiple presses.



Tile Parallel Processing is a feature of the Mercury RIP Architecture. It accelerates system performance for large surfaces by subdividing them into smaller sections, each of which is assigned to a separate instance of PDF Print Engine. By processing multiple tiles in parallel and then seamlessly reassembling them, Tile Parallel Processing significantly reduces overall rendering time for posters, signage, and architectural drawings.



# Adobe PDF Print Engine at a glance

## Typical Market Segments



Graphic arts and commercial printing



Packaging and label printing



Production printing



Large format printing



Variable data printing



Industrial printing



Textile printing



Prepress print proofing

## Typical Jobs



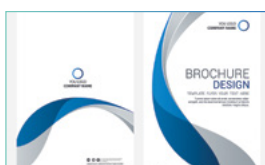
Graphically rich content produced with Adobe and non-Adobe applications



Packaging & labels (CPG, pharma, food, commercial)



Transactional and direct mail



Brochures



Annual reports



Publications and advertising



Books



Signage



CAD, GIS maps, architectural blueprints



## Deployment

- Digital front end (DFE)
- Software RIP
- Workflow systems
- Job preview station (raster-based)
- Proofing solutions



## Supported file types

- Native PDF (Compliant with all PDF standards)
- PostScript (via Adobe PDF Converter SDK)
- TIFF and other image formats



## Parallel processing

- Dynamic distributed RIP model for single machine, cluster, and multipress
- Tile parallel RIP model for LFP jobs
- Mercury RIP Architecture branding and certification



## System Requirements

- Intel i5/i7/Xeon or higher
- RAM: 1GB minimum, 2GB+ recommended for each PDF Print Engine instance
- Hard disk required



## Operating system

- Windows 10 (64 bit)
- MacOS 10.14 or 10.15 (64 bit)
- Linux CentOS (64 bit)

# Adobe Advantage

Adobe print technologies are the product of decades of development, enhanced and extended by ongoing investment and innovation. Since 2006, PDF Print Engine has delivered the latest developments in imaging science to commercial printers, in partnership with the world's leading vendors. PDF Print Engine enables reliable reproduction of every print job, especially rich graphic content designed in Adobe Creative Cloud applications like Adobe Photoshop, Illustrator, and InDesign. It employs the same PDF technology as Adobe Acrobat DC, ensuring that the final printed product matches the customer's expectations.

Partnering with Adobe has many advantages. Commercial printers and their customers have used Adobe products for over 30 years and trust the Adobe brand. OEMs and RIP vendors that build products powered by PDF Print Engine may license Adobe trademarks and logos, as applicable, in their marketing brochures, web pages, application screens, and directly on hardware. Adobe partners also benefit directly from collaboration with world-class engineers and project managers, who work closely to support your products and business strategies.



World-class solutions built on Adobe imaging technologies



Financial strength and ongoing R&D investment



Best support infrastructure in the industry



Competitive licensing models tailored to your needs

## Create

Adobe Photoshop | Adobe Illustrator | Adobe InDesign

## Manage

Adobe Acrobat DC

## Print

Adobe PDF Print Engine

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## Get started

For more information on how Adobe PDF Print Engine can benefit your business,  
contact us at [pdfprintengine@adobe.com](mailto:pdfprintengine@adobe.com)  
or visit [www.adobe.com/products/pdfprintengine](http://www.adobe.com/products/pdfprintengine)

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