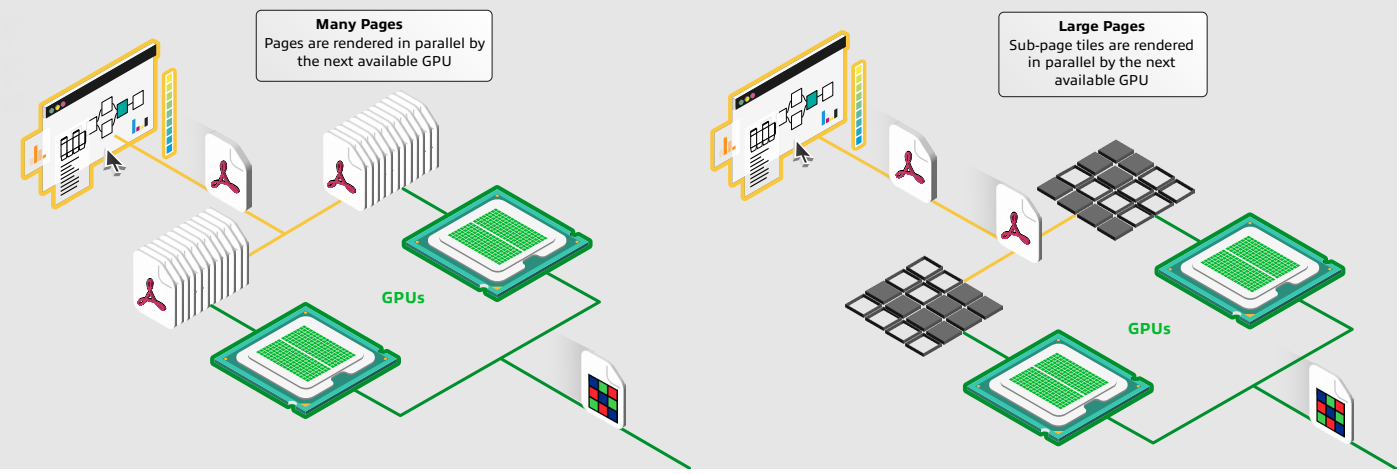
Apex™

Reduce costs and maximize performance with Apex—the world's first fully GPU-native PDL renderer, built for high-performance, cross-platform applications. Unlike traditional solutions that only offload parts of the rendering to the GPU, Apex runs entirely on the GPU, delivering true high-speed PDL rendering. Need even more power? Pair Apex with a CPU renderer to create a hybrid system for ultimate performance.



Apex - the next evolution in high-performance PDL rendering

Apex introduces a new class of PDL renderer—one that runs natively on the GPU for blistering rendering performance, freeing the CPU for other tasks. Unlike traditional GPU acceleration, which offloads only parts of the process, Apex handles the entire rendering workload on the GPU. This not only maximizes speed but also frees up the CPU for additional tasks or even rendering multiple documents simultaneously.

Save money and boost performance: the power of GPUs in modern systems

Most modern CPUs include an integrated GPU, providing additional processing power at no extra cost. For even greater performance, a discrete GPU, such as an NVIDIA 4060 (approx. $300), can be added via a graphics card, with some systems supporting multiple GPUs. Simply updating the software can unlock speed improvements, and leveraging a discrete GPU can eliminate the need for an additional PC, maximizing efficiency and cost savings.

From integrated to discrete: how Apex unlocks GPU rendering everywhere

Vulkan®

Apex is built on Vulkan, a modern, low-overhead graphics and compute API developed by the Khronos Group. Designed for high-efficiency, cross-platform GPU access, Apex seamlessly runs on a wide range of hardware—from integrated GPUs in modern CPUs, such as Intel® Core™ and AMD Ryzen™ with Radeon™ Graphics, to discrete GPUs like the NVIDIA® RTX series. It also supports Apple Metal, ensuring broad compatibility across platforms.

Optimize workflows: assign pages, tiles or bands to multiple GPUs

Apex enables seamless multi-GPU rendering for maximum performance. Distribute workloads efficiently by assigning entire pages to different GPUs or dividing a single page into bands or tiles, allowing multiple GPUs to process them simultaneously.

This parallel approach ensures faster rendering and optimal resource utilization.

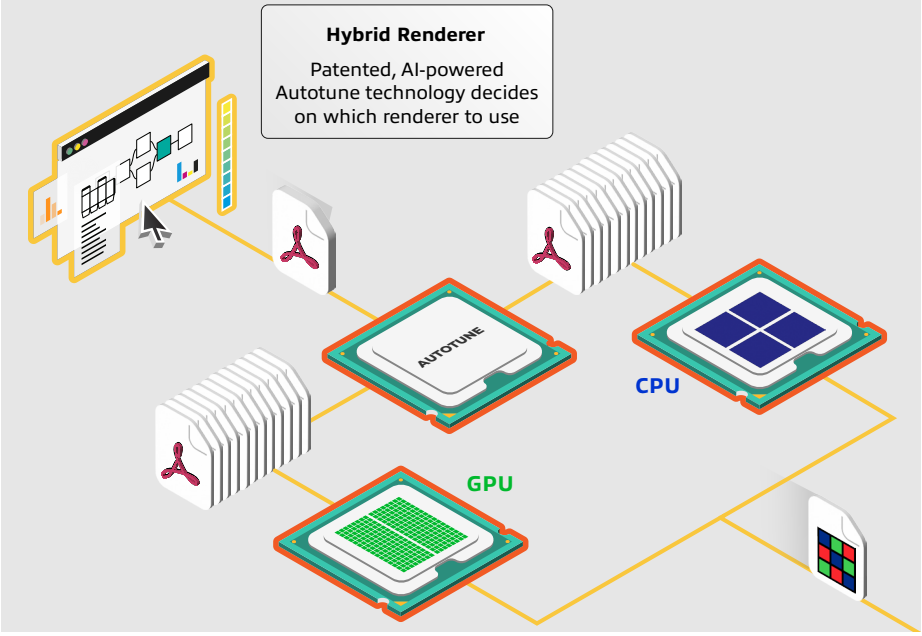
Rendering without compromise: Apex's 16-bit processing and ColorLogic CMM

ColorLogic inside

Apex leverages 16-bit internal arithmetic to deliver precision and high-quality rendering. Expect smooth tones, seamless blends, and natural vignettes as standard. For exceptional color accuracy, Apex integrates ColorLogic's Color Management Module (CMM) and supports extended gamut, ensuring vibrant and true-to-life results.

AI-powered Autotune: smarter hybrid rendering with Apex

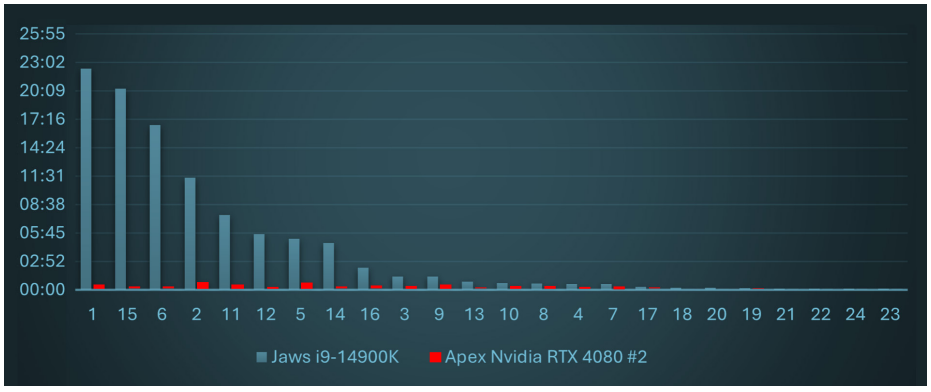
Unlock the best of both worlds with Apex's hybrid rendering and AI-powered Autotune™. While the freed-up CPU can be used for other tasks, it can also be combined with the GPU renderer to create a hybrid renderer. Although GPUs are extremely fast, they are not always faster than CPUs in every scenario. The primary challenge with GPU rendering is the overhead of moving data on and off the GPU. For less complex jobs, this transfer time can sometimes make CPU rendering the faster option. How do you determine whether a job will run faster on the GPU or CPU? That's where our patented AI-powered Autotune technology comes in. Autotune intelligently analyzes each job and directs the hybrid renderer to the optimal processor, ensuring maximum performance and efficiency.



AI-powered Autotune™ technology decides which renderer to use.

Apex vs. Jaws: real-world benchmark

Apex demonstrates outstanding standalone performance, outperforming Mako's Jaws renderer in real-world testing. This comparison was conducted using a real customer test suite of complex files, highlighting Apex's superior speed and efficiency. The chart illustrates rendering time on the y-axis, with job numbers represented on the x-axis. The Jaws renderer was tested on an Intel® Core™ i9-14900K, while Apex was run on two NVIDIA® RTX 4060 GPUs, showcasing the advantages of fully GPU-native rendering.



CPU vs. GPU: Jaws and Apex rendering time, in minutes and seconds

Apex in Enterprise Print workflows

Apex offers a fast and reliable means to generate wrapped-raster PDFs where each page is fully rasterized, which can be advantageous in enterprise print workflows. For example, in a Microsoft WPP (Windows Protected Print) environment, wrapped-raster PDFs offer enhanced document security and control. These image-based PDFs prevent text extraction and editing, supporting compliance with regulations like HIPAA, SOX, and CJIS. They integrate with enterprise document management systems for secure storage, controlled access, and automated workflows. Wrapped-raster PDFs also aid in data loss prevention through watermarking and by limiting data exposure. Logging and audit trails track document handling, enhancing transparency. As a WPP-compatible format, they ensure secure printing and restrict access to authorized users or devices, making them ideal for secure enterprise print workflows.

GLOBAL GRAPHICS® software

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