SIGGRAPH 2020: Intel oneAPI Rendering Toolkit Unleashes Film Fidelity

What's New: At SIGGRAPH 2020, Intel announced the latest additions to the Intel® oneAPI Rendering Toolkit. Part of Intel's oneAPI family of products, the toolkit brings premier high-performance, high-fidelity capabilities to the graphics and rendering industry. The toolkit is designed to accelerate workloads with large data sets and high complexity that require built-in artificial intelligence (AI) through a set of open-source rendering and ray-tracing libraries to create high-performance, high-fidelity visual experiences. The new additions are Intel® OSPRay Studio and OSPRay for Hydra available later in 2020, and visualization capabilities for the oneAPI Intel® DevCloud with sign-up available now on the [Intel Developer Zone website](.).[1]

Intel oneAPI Rendering Toolkit provides high-performance, high-fidelity, extensible and cost-effective platforms with powerful ray-tracing and rendering capabilities to bring rendering to new heights.

Why It Matters: By taking advantage of Intel's XPU hardware, Intel® Optane™ persistent memory, networking solutions and oneAPI software solutions, content creators and developers can bring their ideas to photorealistic reality with performance, efficiency and flexibility across today's and future generations of systems and accelerators.

Intel OSPRay Studio is a scene graph application that demonstrates high-fidelity, ray-traced, interactive, real-time rendering, and provides capabilities to visualize multiple

formats of 3D models and time series. It is used for robust scientific visualization and photoreal rendering and consists of Intel OSPRay in conjunction with other Intel rendering libraries (Intel® Embree, Intel® Open Image Denoise, etc.).

Intel OSPRay for Hydra is a Universal Scene Description (USD) Hydra API-compliant renderer that provides high-fidelity, scalable ray tracing performance and real-time rendering with a viewport-focused interface for film animation and 3D CAD/CAM modeling.

New Intel DevCloud for oneAPI capabilities enable the ability to visualize and iterate rendering and create applications with real-time interactivity via remote desktop. Users can use the Intel oneAPI Rendering Toolkit to optimize visualization performance and evaluate workloads across a variety of the latest Intel hardware (CPU, GPU, FPGA). There is free access with no installation, setup or configuration required.

Advantages of using Intel's platform with an open-development environment for ray tracing and rendering for developers include:

- Open-platform approach addresses single-vendor, lock-in customer concerns with cross-architecture support for a variety of platform choices in performance and costs.

- Rendering toolkit open-source libraries drive innovation through powerful ray-tracing and rendering features that extend beyond the capabilities of GPUs, such as model complexity beyond triangles, path tracing, combined volume and geometry rendering, and addressing the data explosion in today's workloads.

- Simplified AI integration is included via Intel Open Image Denoise, Intel® Distribution of OpenVINO™ toolkit and acceleration via 3rd Gen Intel® Xeon® Scalable processors with Intel® Deep Learning Boost and bfloat16.

- Intel tools provide readiness for next-generation hardware innovations to ensure visualization applications automatically scale to support future Intel CPUs, GPUs and other accelerators.

What the oneAPI Rendering Toolkit brings to life: Entertainment, gaming, HPC and other industries increasingly demand high-quality visuals that are produced at a fast rate with increasingly large data sets and complex workloads, as well as the integration of AI. Examples of the oneAPI Rendering Toolkit in use include:

[Learn how the oneAPI Rendering Toolkit decreases render time for Tangent Studios.](#) (Next Gen Now Available on Netflix. Netflix subscription required.)

[Learn how LAIKA is using the oneAPI Rendering Toolkit to speed up the stop-motion filmmaking process.](#)

[Learn how the oneAPI Rendering Toolkit boosts V-Ray and Corona for Chaos Group.](#)

[Learn how Bentley Motors is using the oneAPI Rendering Toolkit to deliver hyperrealism.](#)

[Customer usages of Intel® oneAPI Rendering Toolkit across Film/VFX, SciVis, product architectural design.](#)

See more Intel and industry leader demos, tech sessions and talks for this year's SIGGRAPH on the [Intel Developer Zone website](#).

More Context: [High Fidelity Rendering Unleashed with Intel – Jim Jeffers tech session with customer walk-ons: Chaos Group, Bentley Motors Limited, Tangent Studios](#) | [Intel at SIGGRAPH Website](#) | [Intel and Industry Leaders SIGGRAPH Demos, Tech Sessions, Talks](#) | [Laika on-demand presentation on using AI powered Rotoscoping](#)

Intel Customer Stories: [Intel Customer Spotlight on Intel.com](#) | [Customer Stories on Intel Newsroom](#)

The Small Print: