DESIGN WITH ACCELERATED CREATIVITY
GPU RENDERING WITH V-RAY

Image courtesy of Double Aye

V-Ray GPU delivers full featured interactivity of your final frame.

Chaos Group's V-Ray provides full production rendering capabilities with its Academy Award-winning ray tracing technology. Independent artists and studios across many industries, from product and architecture design to film and television visual effects, rely on V-Ray GPU to create world-class animations and 3D imagery.

V-Ray GPU is developed with NVIDIA® CUDA®, delivering physically based final frame qualities and highly interactive rendering to support the real-time creative process. It is scalable with multiple GPUs to increase speed—within the workstation, across the network, and to GPU clusters or cloud services—so it can go as fast as your project requires.

V-Ray GPU Spotlight: Dabarti Studio

Image courtesy of Dabarti Studio

Dabarti Studio was cautious about moving to GPU rendering at first but quickly embraced the new workflow when they realized they could see results interactively without waiting for CPU rendering. This real-time feedback is vital to the creative process because it allows immediate feedback on how materials, lights, and other elements affect a scene.

KEY V-RAY GPU FEATURES

> **Smarter Memory Usage for Quality and Speed**
With recent advances to V-Ray GPU, Chaos Group has reduced overall memory usage by up to 70%, and up to 700% through on-demand mip-mapping, an intelligent way to automatically resize textures.

> **NVIDIA NVLink**
In addition to memory-efficient software developments, V-Ray GPU is now the first commercial renderer to support NVIDIA's powerful, high-bandwidth interconnect NVIDIA NVLink™, which allows video memory to be shared between graphics cards. NVLink is now available in the latest NVIDIA Quadro® GP100 and NVIDIA Tesla® P100 cards.

> **Render with All Your Computing Power**
Now with V-Ray Hybrid, artists will have greater flexibility to render a scene using GPUs, CPUs, or a combination of both and the rendered images will be identical, regardless of hardware. This allows artists to use all of the computing power, from high-performance GPU workstations to CPU render nodes.

"We saw immediate jumps in speed, interactivity, and realism. For example, our workflows are 4X-6X faster... and that's just the beginning."

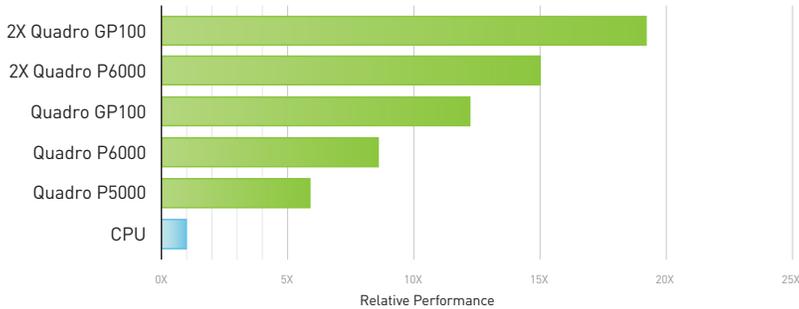—Tomasz Wyszolmirski, Founder, Dabarti Studio

The GPU Rendering Solution

The NVIDIA Quadro® GP100 is the most powerful professional GPU rendering solution available, delivering the fastest rendering speeds possible. The NVIDIA Quadro P6000, with 24GB of memory, allows for the largest images to be rendered with a single GPU. For even larger scenes, connect two GP100s with NVIDIA NVLink* to access up to 32GB of GPU memory.
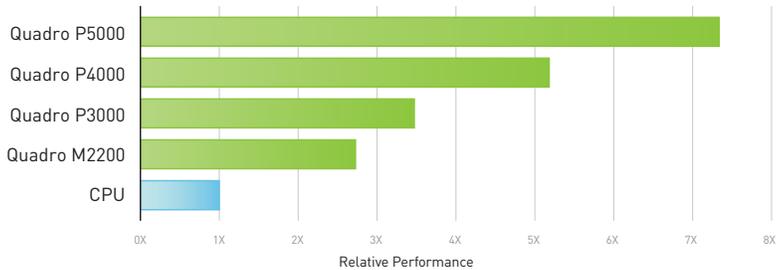
NVIDIA QUADRO GPUs FOR DESKTOP WORKSTATIONS
CHAOS V-RAY GPU

	Relative Performance
2X Quadro GP100	~19X
2X Quadro P6000	~15X
Quadro GP100	~12X
Quadro P6000	~9X
Quadro P5000	~6X
CPU	~1X

Relative Performance (0X – 25X)

Tests run on a workstation with Intel Xeon E5 2697 V3, 14 cores 2.6Ghz, 32GB RAM, running Windows 10 64-bit Anniversary Update and driver 385.09. Performance testing completed with Chaos V-Ray 3.61.01 using internal NVIDIA tests, image resolution 960x540.

NVIDIA QUADRO GPUs FOR MOBILE WORKSTATIONS
CHAOS V-RAY GPU

	Relative Performance
Quadro P5000	~7.5X
Quadro P4000	~5.2X
Quadro P3000	~3.5X
Quadro M2200	~2.8X
CPU	~1X

Relative Performance (0X – 8X)

Tests run on a workstation with Intel Core i7 4790S 3.2GHz 8GB RAM, running Windows 10 64-bit Anniversary Update and driver 384.76. Performance testing completed with Chaos V-Ray 3.61.01 using internal NVIDIA tests, image resolution 960x540.

GP100 SPECIFICATIONS

GPU ARCHITECTURE	**NVIDIA Pascal™**
CUDA FP 32 CORES	**3584**
MEMORY CAPACITY	**16 GB HBM2**
FP 16 PERFORMANCE	**~20 TFLOPS**
FP 32 PERFORMANCE	**~10 TFLOPS**
FP 64 PERFORMANCE	**~5 TFLOPS**
MULTI-GPU	**NVLink (2-way)**
DISPLAY CONNECTORS	**4x DP 1.4 + 1x DVI**
DISPLAY SUPPORT	**4x 4096X2160@120HZ 4x 5120x2880@60HZ**
VR READY	**YES**

Image courtesy of Dabarti Studio
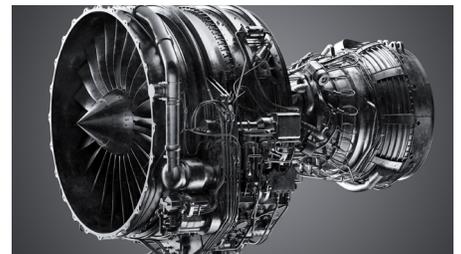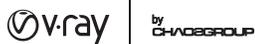
Image courtesy of Double Aye

Image courtesy of Dabarti Studio

NVIDIA professional graphics solutions are certified and recommended by Chaos Group. For the latest updates on software certifications and support, please visit the Chaos Group V-Ray support website. The close collaboration during product development guarantees stability and reliability of the platform just the way you expect from day one.

To learn more, visit **www.nvidia.com/gpurendering**

For more information on Chaos Group V-Ray GPU, visit **www.chaosgroup.com**