

A Quantum Leap in Gaming: NVIDIA Introduces GeForce GTX 1080

Powered by Pascal Architecture, Delivers up to 2x Performance and 3X Efficiency of GeForce GTX TITAN X

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NVIDIA today announced the NVIDIA® GeForce® GTX 1080 -- the first gaming GPU based on the company's new [Pascal™ architecture](#) -- providing up to 2x more performance in virtual reality compared to the GeForce GTX TITAN X.

Pascal offers massive leaps in performance, memory bandwidth and power efficiency over its predecessor, the high-performance Maxwell™ architecture. And it introduces groundbreaking graphics features and technologies that redefine the PC as the ultimate platform for playing AAA games and enjoying virtual reality.

"The PC is the world's favorite gaming platform, and our new Pascal GPU architecture will take it to new heights," said Jeff Fisher, senior vice president of NVIDIA's PC business. "Our first Pascal gaming GPU, the GeForce GTX 1080, enables incredible realism in gaming and deeply immersive VR experiences, with dramatically improved performance and efficiency. It's the most powerful gaming GPU ever built, and some of our finest work."

Five Marvels of Pascal

NVIDIA engineered the Pascal architecture to handle the massive computing demands of technologies like VR. It incorporates five transformational technologies:

- **Next-Gen GPU Architecture.** Pascal is optimized for performance per watt. The GTX 1080 is 3x more power efficient than the Maxwell Architecture.
- **16nm FinFET Process.** The GTX 1080 is the first gaming GPUs designed for the 16nm FinFET process, which uses smaller, faster transistors that can be packed together more densely. Its 7.2 billion transistors deliver a dramatic increase in performance and efficiency.
- **Advanced Memory.** Pascal-based GPUs are the first to harness the power of 8GB of Micron's GDDR5X memory. The 256-bit memory interface runs at 10Gb/sec., helping to drive 1.7x higher effective memory bandwidth than that delivered by regular GDDR5.
- **Superb Craftsmanship.** Increases in bandwidth and power efficiency allow the GTX 1080 to run at clock speeds never before possible -- over 1700 MHz -- while consuming only 180 watts of power. New asynchronous compute advances improve efficiency and gaming performance. And new GPU Boost™ 3 technology supports advanced overclocking functionality.
- **Groundbreaking Gaming Technology.** NVIDIA is changing the face of gaming from development to play to sharing. New NVIDIA VRWorks™ software features let game developers bring unprecedented immersiveness to gaming environments. NVIDIA's Ansel™ technology lets gamers share their gaming experiences and explore gaming worlds in new ways.

"We were blown away by the performance and features of the GTX 1080," said Tim Sweeney, founder of Epic Games. "We took scenes from our Paragon game cinematics that were designed to be rendered offline, and rendered them in real time on GTX 1080. It's mind-blowing and we can't wait to see what developers create with UE4 and GTX 1080 in the world of games, automotive design, or architectural visualization -- for both 2D screens and for VR."

VRWorks: A New Level of Presence for VR

To fully immerse users in virtual worlds, the enhanced [NVIDIA VRWorks software development kit](#) offers a never before experienced level of "VR presence." It combines what users see, hear and touch with the physical behavior of the environment to convince them that their virtual experience is real.

- **2x VR Graphics Performance:** VRWorks Graphics now includes a simultaneous multi-projection capability that renders natively to the unique dimensions of VR displays instead of traditional, 2D monitors. It also renders geometry for the left and right eyes simultaneously in a single pass.
- **Enveloping Audio:** VRWorks Audio uses the NVIDIA OptiX™ ray-tracing engine to trace the path of sounds across an environment in real time, fully reflecting the size, shape and material of the virtual world.
- **Interactive Touch and Physics:** NVIDIA PhysX® for VR detects when a hand controller interacts with a virtual object, and enables the game engine to provide a physically accurate visual and haptic response. It also models the physical behavior of the virtual

world around the user so that all interactions -- whether an explosion or a hand splashing through water -- behave as if in the real world.

NVIDIA has integrated these technologies into a new VR experience called [VR Funhouse](#).

"GeForce GTX 1080 promises to be the ultimate graphics card for experiencing EVE: Valkyrie," said Hilmar Veigar Pétursson, CEO of CCP Games. "We are looking forward to bringing NVIDIA's new VRWorks features to Valkyrie to take the game's visuals and performance to another level."

Ansel: Capturing the Artistry of Gaming

NVIDIA also announced [Ansel, a powerful game capture tool](#) that allows gamers to explore, capture and share the artistry of gaming in ways never before possible.

With Ansel, gamers can compose the gameplay shots they want, pointing the camera in any direction and from any vantage point within a gaming world. They can capture screenshots at up to 32x screen resolution, and then zoom in where they choose without losing fidelity. With photo-filters, they can add effects in real time before taking the perfect shot. And they can capture 360-degree stereo photospheres for viewing in a VR headset or Google Cardboard.

Availability and Pricing

The NVIDIA GeForce GTX 1080 "Founders Edition" will be available on May 27 for \$699. It will be available from ASUS, Colorful, EVGA, Gainward, Galaxy, Gigabyte, Innvision 3D, MSI, NVIDIA, Palit, PNY and Zotac. Custom boards from partners will vary by region and pricing is expected to start at \$599.

The GeForce GTX 1080 will also be sold in fully configured systems from leading U.S.-based system builders, including AVADirect, Cyberpower, Digital Storm, Falcon Northwest, Geekbox, IBUYPOWER, Maingear, Origin PC, Puget Systems, V3 Gaming and Velocity Micro, as well as system integrators outside North America.

The NVIDIA GeForce GTX 1070 "Founders Edition" will be available on June 10 for \$449. Custom boards from partners are expected to start at \$379.

More information on the GeForce GTX 1080 and 1070 is available at www.geforce.com.

Ansel will be available in upcoming releases and patches of games such as *Tom Clancy's The Division*, *The Witness*, *Lawbreakers*, *The Witcher 3*, *Paragon*, *No Man's Sky*, *Obduction*, *Fortnite* and *Unreal Tournament*.

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About NVIDIA

[NVIDIA](#) (NASDAQ: [NVDA](#)) is a computer technology company that has pioneered GPU-accelerated computing. It targets the world's most demanding users -- gamers, designers and scientists -- with

products, services and software that power amazing experiences in virtual reality, artificial intelligence, professional visualization and autonomous cars. More information at <http://nvidianews.nvidia.com/>.

1 Performance measured in Mech VR tech demo.

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