

Cloud Gaming Moves at the Blink of an Eye With NVIDIA GeForce GRID

New Offering Enables Gaming-as-a-Service Operators to Stream Even the Most Advanced Games to Connected TVs, PCs, Tablets and Phones

SAN JOSE, CA -- GPU Technology Conference -- Gaming enters a new era today with the launch of the [NVIDIA® GeForce® GRID cloud gaming platform](#), which allows gaming-as-a-service providers to stream next-generation games to virtually any device, without the lag that hampers current offerings.

With the GeForce GRID platform, gaming-as-a-service providers can deliver the most advanced visuals with lower latency, while incurring lower operating costs, particularly related to energy usage. Gamers benefit from the ability to play the latest, most sophisticated games on any connected device, including TVs, smartphones and tablets running iOS and Android.

"Gamers will now have access to seamlessly play the world's best titles anywhere, anytime, from phones, tablets, TVs or PCs," said Phil Eisler, general manager of cloud gaming at NVIDIA. "GeForce GRID represents a massive disruption in how games are delivered and played."

GeForce GRID was introduced at the GPU Technology Conference (GTC), as part of a series of announcements from NVIDIA, all of which can be accessed in the [GTC online press room](#).

The key technologies powering the new platform are NVIDIA GeForce GRID GPUs with dedicated ultra-low-latency streaming technology and cloud graphics software. Together, they fundamentally change the economics and experience of cloud gaming, enabling gaming-as-a-service providers to operate scalable data centers at costs that are in line with those of movie-streaming services.

NVIDIA GeForce GRID GPUs

Using the highly efficient [NVIDIA Kepler™ architecture](#), NVIDIA GeForce GRID GPUs minimize power consumption by simultaneously encoding up to eight game streams. This allows providers to cost-effectively scale their service offerings to support millions of concurrent gamers.

Featuring two Kepler architecture-based GPUs, each with its own encoder, the processors have 3,072 CUDA® technology cores and 4.7 teraflops of 3D shader performance. This enables providers to render highly complex games in the cloud and encode them on the GPU, rather than the CPU, allowing their servers to simultaneously run more game streams. Server power-consumption per game stream is reduced to about one-half that of previous implementations, an important metric for data centers.

Fast Streaming Technology

Fast streaming technology reduces server latency to as little as 10 milliseconds -- less than one-tenth the blink of an eye -- by capturing and encoding a game frame in a single pass. The GeForce GRID platform uses fast-frame capture, concurrent rendering and single-pass encoding to achieve ultra-fast game streaming.

The latency-reducing technology in GeForce GRID GPUs compensates for the distance in the network, so gamers will feel like they are playing on a gaming supercomputer located in the same room. Lightning-fast play is now possible, even when the gaming supercomputer is miles away.

GeForce GRID Enables the Virtual Game Console

Also at GTC, NVIDIA and Gaikai demonstrated a virtual game console, consisting of an LG Cinema 3D Smart TV running a Gaikai application connected to a GeForce GRID GPU in a server 10 miles away. Instant, lag-free play was enabled on a highly complex PC game, with only an Ethernet cable and wireless USB game pad connected to the TV.

Leading Gaming-as-a-Service Providers Companies Endorse GeForce GRID

A number of leading gaming-as-a-service providers announced their support of the GeForce GRID. Among them:

"Not so long ago, engineers said cloud gaming was impossible, and that it was not possible for cloud gaming to be as fast or high-quality as local, console-based gaming. Obviously, they didn't know that Gaikai and NVIDIA would be working together. We're proving the doubters wrong."

-- David Perry, CEO, Gaikai

"Just like iPhone games have taken over the handheld games market because of ease of use, cloud gaming will expand gaming by making it incredibly convenient."

-- Guy De Beer, CEO, Playcast Media System

"We have worked closely with NVIDIA to use the GeForce GRID processor architecture in Ubitus GameCloud®. Ubitus delivers highly scalable cloud gaming solutions with a native-like gaming experience for service providers."

-- Wesley Kuo, CEO, Ubitus

Game Developers Endorse GeForce GRID

A range of leading game developers also announced their support of GeForce GRID. Among them:

"At Epic, we're really excited about NVIDIA's announcement of the GeForce GRID platform. NVIDIA's GRID technology, with its latency reduction and improved image quality, combined with higher density and power efficiency, are significant steps toward making cloud gaming a true console-like experience today, and bringing that high-quality gaming experience to more people."

"Cloud has the potential to deliver an even more powerful experience in the future by enabling ultra-high-end GPUs like the GeForce GTX 680 to stream ultra-high-quality graphics such as those made possible by UE4 to a huge range of devices, well beyond console capabilities. The result will be that more people can enjoy EPIC's games on more devices at higher quality."

-- Tim Sweeney, founder and CEO, EPIC Games

"The compelling advances that GeForce GRID introduces to cloud gaming are especially beneficial to Capcom game fans, as we are focused on delivering AAA action games that are reliant on low latency for the best experience. We are, therefore, very excited about NVIDIA's contributions in this space."

-- Masaru Ijuin, deputy general manager, Technology Research and Development, Capcom Co., Ltd.

"Online gaming with underlying cloud infrastructure is an important part of modern games. Cloud gaming is an exciting new way of delivering games to streaming customers. In reviewing NVIDIA's GeForce GRID, I see the potential for this technology to reduce some of the latency issues that affect game streaming. This is an exciting development."

-- Juancho Buchanan, vice president of Technology, THQ Inc.

For more information about GeForce GRID, please visit: <http://www.nvidia.com/geforcegrid>.

About GTC

The [GPU Technology Conference](#) (GTC) advances global awareness of GPU computing and visualization, and their importance to the future of science and innovation. View the latest news from NVIDIA and its partners in the [GTC press room](#).

About NVIDIA

[NVIDIA](#) (NASDAQ: NVDA) awakened the world to computer graphics when it invented the [GPU](#) in 1999. Today, its [processors](#) power a broad range of products from [smartphones](#) to [supercomputers](#). NVIDIA's [mobile processors](#) are used in [cell phones](#), [tablets](#) and [auto infotainment systems](#). [PC gamers](#) rely on GPUs to enjoy spectacularly immersive worlds. Professionals use them to create [3D graphics](#) and visual effects in movies and to design everything from golf clubs to jumbo jets. And researchers utilize GPUs to advance the frontiers of science with [high performance computing](#). The company has more than 4,500 patents issued, allowed or filed, including ones covering ideas essential to modern computing. For more information, see www.nvidia.com.

Certain statements in this press release including, but not limited to statements as to: the availability, benefits and impact of the NVIDIA GeForce GRID cloud gaming platform; and the effects of the company's patents on modern computing are forward-looking statements that are subject to risks and uncertainties that could cause results to be materially different than expectations. Important factors that could cause actual results to differ materially include: global economic conditions; our reliance on third parties to manufacture, assemble, package and test our products; the impact of technological development and competition; development of new products and technologies or enhancements to our existing product and technologies; market acceptance of our products or our partners products; design, manufacturing or software defects; changes in consumer preferences or demands; changes in industry standards and interfaces; unexpected loss of performance of our products or technologies when integrated into systems; as well as other factors detailed from time to time in the reports NVIDIA files with the Securities and Exchange Commission, or SEC, including its Form 10-K for the fiscal period ended January 29, 2012. Copies of reports filed with the SEC are posted on the company's website and are available from NVIDIA without charge. These forward-looking statements are not guarantees of future performance and speak only as of the date hereof, and, except as required by law, NVIDIA disclaims any obligation to update these forward-looking statements to reflect future events or circumstances.

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Supporting Industry Quotes for NVIDIA GeForce GRID

"LG is very excited to be working with Gaikai for video game cloud streaming of AAA games, eliminating the need of bulky consoles to play games on thin smart TVs. With this new technology from NVIDIA, our cloud service with Gaikai will have increased performance and showcase the latest games at their full capability."

-- Taegil Cho, vice president, LG Electronics

"Cloud rendering is the future of software delivery in our post-PC world and OTOY's cloud platform with NVIDIA's GeForce Grid technology brings cloud rendering to the mainstream, delivering unlimited rendering power to next-generation games and 3D apps on every Internet-connected device, regardless of hardware or operating system."

-- Jules Urbach, CEO and Founder of OTOY

"The main challenge developers face right now in cloud gaming is latency. GeForce GRID brings native-equivalent responsiveness within reach, and really opens up the kinds of experiences we can provide. We're impressed with what OnLive and Gaikai are able to do so far, and with NVIDIA's technology, it looks like it will get better still."

-- Michael Austin, CTO, Hidden Path Entertainment

"The GeForce GRID is just amazing! We're able to design and build for the highest production values and then deliver to the lowest min spec. Cloud gaming has arrived with a vengeance!"

-- Mark Long, CEO, Meteor Entertainment

"NVIDIA's GeForce GRID opens up a whole new potential for exciting game engines that are able to simulate massive worlds and player bases in the cloud, streaming directly to low-power devices, allowing gaming experiences that aren't possible even on today's hardware. I really look forward to the games that are able to take full advantage of this technology."

-- Jon Mavor, CTO, Uber Entertainment

"High-quality cloud gaming is an absolute dream scenario for us because it allows a wide number of players to enjoy our game in its full glory. GeForce GRID gets us to that position, with super low latency and super high-quality visuals. It makes our hard work and investment all the more worthwhile."

-- Tobias Persson, founder and rendering architect, Bitsquid AB

"It is exciting to watch how cloud gaming is becoming mature and gives better and better user experience -- and NVIDIA's GeForce GRID technology is example of it. We are looking forward to see how cloud computing using this technology will change the future of gaming and the overall gaming experience and how it will affect consoles and PCs."

-- Bartłomiej Wronski, lead engine programmer, CDPROJEKT

"Fatshark as an entertainment company and as a technology company is always keen to understand the trends of the market. Our background in technology outside of games, gives us a solid understanding of what the infrastructure necessary to make a cloud network a reality. Having seen GeForce GRID's potential at massively reducing latency whilst improving the actual end-user quality experience, this can only be a good thing. For our latest game, Krater, we don't want to have our users playing a dialed down version. Our vision is for everybody to be able to play our games in the way that we intended them to be seen when we created them, on whatever gaming rig they have, and the GRID technology makes this an absolute reality."

-- Martin Wahlund, founder and CEO, Fatshark AB

"As a programmer, seeing any number of milliseconds potentially added to the frame time of our games is concerning. But the extra power gained by parallelizing code across several high-end PCs is intriguing. If NVIDIA's GeForce GRID can solve the latency and quality problems commonly associated with game streaming products, you could end up creating something pretty spectacular."

-- Jesse Attard, lead engine programmer, Digital Extremes

"While cloud game streaming services offer a viable means to enjoying games, GeForce GRID distinguishes itself from other implementations by dramatically addressing two major limitations in existing cloud technologies -- latency and image quality."

"We greatly welcome the profound advancements that GeForce Grid brings to the cloud gaming platform. Thanks to GeForce Grid, the day will soon arrive when many of Sega's titles will become available via streamed content. We are excited about the prospects of enabling a broad base of users to enjoy our key franchises the way we intended them to be enjoyed -- with beautiful visuals and speedy response times intact."

-- Masaru Igarashi, Department Manager, Network Business Dept., Sega Corporation

"Cloud gaming is about to take a huge leap forward with GeForce GRID. We're excited to see how GeForce GRID can overcome the limitations of current cloud gaming and deliver another level of gaming experiences."

-- Hanjin Oh, General Manager, NCSoft

"Gearbox Software has long been an advocate and partner of cloud gaming and the evolution of software technology optimized for remote simulation. NVIDIA's GeForce GRID signals not only the growing opportunity with the cloud gaming approach, but also promises to radically increase performance and quality of applications using NVIDIA's new cloud gaming optimized technology."

-- Randy Pitchford, President, Gearbox Software

"GeForce GRID is major news for us and for gamers. It makes it far easier for us to get our games, like Red Orchestra 2 and the million-selling Killing Floor, delivered in great form by gaming services such as OnLive and Gaikai."

-- Alan Wilson, vice president, Tripwire Interactive

"The industry has been waiting for cloud gaming to blossom for several years now. With the introduction of GeForce GRID, what we are witnessing now is a solution that is about to revolutionize online gaming, a solution that requires less effort from a player to get the best gaming experience."

"As an online game developer and publisher, we are excited to be a part of this shift, and would like to thank NVIDIA for bringing us closer to a new era of greater possibilities."

-- Victor Kislyi, CEO, Wargaming.net

"When the concept of cloud gaming was unveiled I was very intrigued about the idea. Not only from a customer's point of view but also from a business and technological perspective. Where the technology was concerned, I was especially interested in seeing how the companies would deal with the huge demands on both network services and computing and rendering power. My main concern was of course latency since I could not imagine how steady gameplay without lag would be achieved -- especially in action and FPS games where every millisecond counts."

"When the 1st generation of cloud gaming was released they proved that games are indeed playable, but I was still skeptical about the delay between player input and the visible reaction. From the information available regarding GeForce GRID technology I can see that development has moved forward in this area and with their latencies moving really close to console gaming, I think that cloud gaming has finally reached a point where it can spread to a wider audience and reach its full business potential."

-- Jan Kunt, Executive Producer, Bohemia Interactive

"It's very exciting that GeForce GRID can provide more of our customers access to high-quality rendering and gameplay simulation, to be able to experience our games across a wide variety of hardware, or even take the game with them on the go."

-- David Richardson, Graphics Lead, Cryptic Studios

"As we move past the era of physical media to the era of digital media, it's time to realize that it will be a short reign before even locally stored digital media is dead. Particularly in gaming, cloud storage and streamed content are the future. With NVIDIA's GeForce GRID technology, that future is now."

-- Max Schaefer, CEO, Runic Games

"NVIDIA's GeForce GRID without doubt offers a completely new platform for the creation and delivery of a new wave of gaming. The ability to create the highest end 3D games, coupled with custom GPU power, delivered to a massive audience of thin clients such as netbook, tablets and generations of PC's, is extremely exciting. By tackling the core issues of latency, image quality and scalability, NVIDIA is truly bringing what was the future of cloud gaming right into the present."

-- Dave Jones, Co-founder, Cloudgine Ltd.

"Viva Media is excited about the future of Cloud, a future that's looking even brighter thanks to GeForce GRID. NVIDIA's technology dramatically improves the two most important parts of the Cloud experience for gamers -- image quality and latency -- making for an extremely compelling experience."

-- Carlo Voelker, CEO, Viva Media

"Cloud gaming is getting the boost it needs with NVIDIA's GeForce GRID platform. Latencies are low, quality is high, and the tech is there to show off cloud gaming better than ever before. We can't wait!"

-- Bogdan Operscu, City Interactive Executive Producer

"NVIDIA looks to set a new standard in Cloud Gaming solutions with GeForce GRID. We feel this technology will play a significant role in expanding the consumer base while increasing the gameplay experience."

-- Kelly Zmak, President, Infinite Game Publishing

"We considered cloud gaming as one of the priorities for the development of our business and were pleased to know that NVIDIA has prepared a solution that significantly improves the quality of online services. We look forward to the moment when our players can enjoy the charm of Panzar: Forged by Chaos on any office computer and any TV screen."

-- Viacheslav Dubikovsky, Executive Producer, Panzar Studio

"At Hi-Rez Studios we believe strongly in gaming as a service -- player-driven, online and accessible. With our games Global Agenda and Tribes: Ascend we have harnessed the latest technology toward the vision of connected gaming. It is exciting to see proven game hardware providers like NVIDIA embrace this vision with the new GeForce GRID."

-- Todd Harris, Hi-Rez Studios COO

"Latency has been one of the most important issues for cloud gaming and NVIDIA's GeForce GRID is a major move forward in making it a much more enjoyable experience for players by decreasing this problem. I believe that as soon as the major digital distribution players incorporate the next generation of cloud gaming technology into their services, we will see a rapid growth in this form of game delivery. Cloud distribution can remove a lot of headaches from a developer's mind and I am enthusiastically looking forward to seeing it grow."

-- Pawel Lekki, COO, Exor Studios

About NVIDIA

Since 1993, [NVIDIA](#) (NASDAQ : NVDA) has pioneered the art and science of [visual computing](#). The company's technologies are transforming a world of displays into a world of interactive discovery — for everyone from gamers to scientists, and consumers to enterprise customers. More information at <http://nvidianews.nvidia.com/> and <http://blogs.nvidia.com/>.

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