Nvidia announces next-gen RTX 4090 and RTX 4080 GPUs

Nvidia is officially announcing its RTX 40-series GPUs today. After months of rumors and some recent teasing from Nvidia, the RTX 4090 and RTX 4080 are now both official. The RTX 4090 arrives on October 12th priced at $1,599, with the RTX 4080 priced starting at $899 and available in November. Both are powered by Nvidia’s next-gen Ada Lovelace architecture.

The is the top-end card for the Ada Lovelace generation. It will ship with a massive 24GB of GDDR6X memory. Nvidia claims it’s 2–4x faster than the RTX 3090 Ti, and it will consume the same amount of power as that previous generation card. Nvidia recommends a power supply of at least 850 watts based on a PC with a Ryzen 5900X processor.

Inside the giant RTX 4090, there are 16,384 CUDA Cores, a base clock of 2.23GHz that boosts up to 2.52GHz, 1,321 Tensor-TFLOPs, 191 RT-TFLOPs, and 83 Shader-TFLOPs.



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Nvidia is actually offering in two models, one with 12GB of GDDR6X memory and another with 16GB of GDDR6X memory, and

Nvidia claims it’s 2–4x faster than the existing RTX 3080 Ti. The 12GB model will start at $899 and include 7,680 CUDA Cores, 7,680 CUDA Cores, a 2.31GHz base clock that boosts up to 2.61GHz, 639 Tensor-TFLOPs, 92 RT-TFLOPs, and 40 Shader-TFLOPs.

The 16GB model of the RTX 4080 isn’t just a bump to memory, though. Priced starting at $1,199, it’s more powerful, with 9,728 CUDA Cores, a base clock of 2.21GHz that boosts up to 2.51GHz, 780 Tensor-TFLOPs, 113 RT-TFLOPs, and 49 Shader-TFLOPs of power. The 12GB RTX 4080 model will require a 700-watt power supply, with the 16GB model needing at least 750 watts. Both RTX 4080 models will launch in November.

All three of these RTX 40-series cards will include new Nvidia ShadowPlay support to capture gameplay at up to 8K resolution at 60 FPS in HDR. Nvidia is also using its latest Encoders (NVENC) with support for AV1 encoding and improved efficiency for livestreams using AV1.



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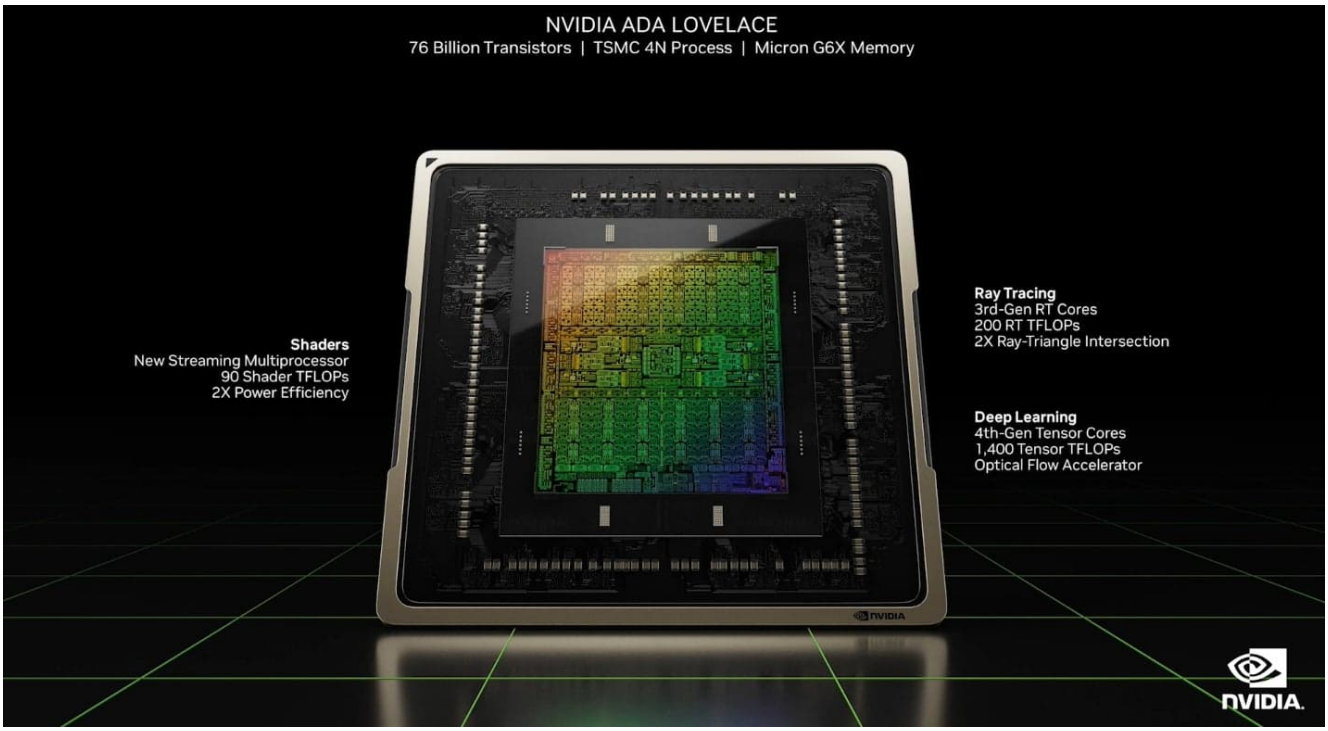
a:hover]:text-black [&>a]:shadow-underline-gray-63 [&>a:hover]:shadow-underline-black text-gray-63″>Image: Nvidia It wouldn’t be a new RTX launch without Nvidia’s own Founders Edition graphics cards. Nvidia will sell GeForce RTX 4090 and RTX 4080 (16GB) graphics cards with its own in-house design. It’s a design that the company has upgraded once again.

“For our new GeForce RTX 40 Series Founders Edition graphics cards, we’ve further optimized the Dual Axial Flow Through system, increasing fan sizes and fin volume by 10%, and upgrading to a 23-phase power supply,” , technical marketer at Nvidia. “Memory temperatures are reduced, and the new, substantially more powerful Ada GPUs are kept cool in ventilated cases, giving gamers excellent overclocking headroom.”

Nvidia is supporting the PCIe Gen-5 16-pin connector with its own RTX 40-series cards instead of the custom solution it created for its own RTX 30-series Founders Edition GPUs. Like the previous connector, it’s a single cable that will power a 40-series card, or you can use an adapter that’s included in

the box to connect three 8-pin power connectors. Nvidia says you might even want to connect a fourth one for “more overclocking headroom.”

ATX 3.0 power supplies that will natively support PCIe Gen-5 16-pin connectors are arriving in October from Asus, Cooler Master, FSP, Gigabyte, iBuyPower, MSI, and Thermaltake. More models from other manufactures are expected soon, too.



a:hover]:text-black [&>a]:shadow-underline-gray-63 [&>a:hover]:shadow-underline-black text-gray-63″>Image: Nvidia Ada Lovelace, named after the English mathematician and writer, is the third generation of RTX that powers both the RTX 4080 and RTX 3090. It’s designed to greatly improve ray tracing and support Deep Learning Super Sampling (DLSS) 3.

Nvidia introduced its third-generation Ada Lovelace RTX architecture with a Racer RTX demo today — a simulation of an off-road kart racing game. The Racer RTX demo was powered by a single Ada Lovelace GPU, which includes 76 billion transistors and is built on TSMC’s 4nm process.

Ada Lovelace also includes third-generation RT cores that are designed to greatly improve ray tracing. Part of the improvements come down to a new DLSS 3 AI that processes the new frame and the prior frame to figure out how game scenes are changing. Nvidia demonstrated *Microsoft Flight Simulator* frame rates more than doubling using DLSS 3. This new frame generation should mean DLSS 3 can boost frame rates even when a game is bottlenecked by a CPU.

Nvidia says DLSS 3 is coming to more than 35 games and apps, starting with the first games in October. We'll naturally need to put all of Nvidia's claims to the test in the coming months as it launches the RTX 4090 and two models of the RTX 4080.

The launch of RTX 40-series cards comes at a challenging time for Nvidia and the GPU market as a whole. GPU demand has been dampened by the crypto crash, and more recently, the prevalence of GPU-based crypto mining has plummeted thanks to Ethereum's switch to proof of stake. Nvidia's gaming revenue dropped by a staggering $1 billion in its latest earnings.



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Nvidia's launch is focused on its first-party Founders Edition graphics cards, but these will be sold alongside additional

GPUs from hardware partners such as Asus, Colorful, Gainward, Galaxy, Gigabyte, INNO3D, MSI, Palit, PNY, and Zotac. These third-party GPU models use the same Nvidia processors but may be configured differently and have different coolers. But don’t expect to see RTX 40-series GPUs from EVGA, which recently announced it would no longer be making Nvidia graphics cards, citing poor behavior from the chip maker.

Although its successor is now official, previous RTX 30-series GPUs are likely to be available for some time to come. Earlier this year, Nvidia admitted it built too many GPUs and was forced to adjust retail pricing due to excess inventory. This resulted in RTX 30-series cards appearing at MSRP after years of price hikes by resellers, a welcome sight for cash-strapped PC gamers.

Developing…

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