

Abu Dhabi's G42 and Cerebras unveil Condor Galaxy 1, a 4-exaflop AI supercomputer

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Jul 20 2023 Cerebras and G42 Unveil World's Largest Supercomputer for AI Training with 4 exaFLOPs to Fuel a New Era of Innovation - Cerebras Tin Hoang

Sunnyvale, CA— July 20, 2023 – Cerebras Systems, the pioneer in accelerating generative AI, and G42, the UAE-based technology holding group, today announced Condor Galaxy, a network of nine interconnected supercomputers, offering a new approach to AI compute that promises to significantly reduce AI model training time. The first AI supercomputer on this network, Condor Galaxy 1 (CG-1), has 4 exaFLOPs and 54 million cores. Cerebras and G42 are planning to deploy two more such supercomputers, CG-2 and CG-3, in the U.S. in early 2024. With a planned capacity of 36 exaFLOPs in total, this unprecedented supercomputing network will revolutionize the advancement of AI globally.

"Collaborating with Cerebras to rapidly deliver the world's fastest AI training supercomputer and laying the foundation for interconnecting a constellation of these supercomputers across the world has been enormously exciting. This partnership brings together Cerebras' extraordinary compute capabilities, together with G42's multi-industry AI expertise. G42 and Cerebras' shared vision is that Condor Galaxy will be used to address society's most pressing challenges across healthcare, energy, climate action and more," said Talal Alkaissi, CEO of G42 Cloud, a subsidiary of G42.

Located in Santa Clara, California, CG-1 links 64 Cerebras CS-2 systems together into a single, easy-to-use AI supercomputer, with an AI training capacity of 4 exaFLOPs. Cerebras and G42 offer CG-1 as a cloud service, allowing customers to enjoy the performance of an AI supercomputer without having to manage or distribute models over physical systems.

CG-1 is the first time Cerebras has partnered not only to build a dedicated AI supercomputer but also to manage and operate it. CG-1 is designed to enable G42 and its cloud customers to train large, ground-breaking models quickly and easily, thereby accelerating innovation. The Cerebras-G42 strategic partnership has already advanced state-of-the-art AI models in Arabic bilingual chat, healthcare and climate studies.

"Delivering 4 exaFLOPs of AI compute at FP 16, CG-1 dramatically reduces AI training timelines while eliminating the pain of distributed compute," said Andrew Feldman, CEO of Cerebras Systems. "Many cloud companies have announced massive GPU clusters that cost billions of dollars to build, but that are extremely difficult to use. Distributing a single model over thousands of tiny GPUs takes months of time from dozens of people with rare expertise. CG-1 eliminates this challenge. Setting up a generative AI model takes minutes, not months and can be done by a single person. CG-1 is the first of three 4 exaFLOP AI supercomputers to be deployed across the U.S. Over the next year, together with G42, we plan to expand this deployment and stand up a staggering 36 exaFLOPs of efficient, purpose-built AI compute."

A leading AI and cloud computing company based in the UAE, G42 is driving large-scale digital transformation initiatives globally. The UAE was the first nation to appoint a Minister for AI in their federal government, followed by massive investments, including the establishment of G42 research partner, Mohamed bin Zayed University of Artificial Intelligence (MBZUAI), the first post-graduate university in the world focused entirely on AI.

Training large models requires huge amounts of compute, vast datasets, and specialized AI expertise. The partnership between G42 and Cerebras delivers on all three of these elements. With the Condor Galaxy supercomputing network, the two companies are democratizing AI, enabling simple and easy access to the industry's leading AI compute. G42's work with diverse datasets across healthcare, energy and climate studies will enable users of the systems to train new cutting-edge foundational models. These models and derived applications are a powerful force for good. Finally, Cerebras and G42 bring together a team of hardware

engineers, data engineers, AI scientists, and industry specialists to deliver a full-service AI offering to solve customers' problems. This combination will produce ground-breaking results and turbo charge hundreds of AI projects globally.

About Condor Galaxy 1 (CG-1)

Optimized for Large Language Models and Generative AI, CG-1 delivers 4 exaFLOPs of 16 bit AI compute, with standard support for up to 600 billion parameter models and extendable configurations that support up to 100 trillion parameter models. With 54 million AI-optimized compute cores, 388 terabits per second of fabric bandwidth, and fed by 72,704 AMD EPYC processor cores, unlike any known GPU cluster, CG-1 delivers near-linear performance scaling from 1 to 64 CS-2 systems using simple data parallelism.

"AMD is committed to accelerating AI with cutting edge high-performance computing processors and adaptive computing products as well as through collaborations with innovative companies like Cerebras that share our vision of pervasive AI," said Forrest Norrod, executive vice president and general manager, Data Center Solutions Business Group, AMD. "Driven by more than 70,000 AMD EPYC processor cores, Cerebras' Condor Galaxy 1 will make accessible vast computational resources for researchers and enterprises as they push AI forward."

CG-1 offers native support for training with long sequence lengths, up to 50,000 tokens out of the box, without any special software libraries. Programing CG-1 is done entirely without complex distributed programming languages, meaning even the largest models can be run without weeks or months spent distributing work over thousands of GPUs.

Located at Colovore, a high-performance colocation facility in Santa Clara, California, CG-1 is operated by Cerebras under U.S. laws, ensuring state of the art AI systems are not used by adversary states. Each Cerebras CS-2 system is designed, packaged, manufactured, tested, and integrated in the U.S.; Cerebras is the only AI hardware company to package processors and manufacture AI systems in the U.S.

CG-1 is the first of three 4 exaFLOP AI supercomputers (CG-1, CG-2, and CG-3), built and located in the U.S. by Cerebras and G42 in partnership. These three AI supercomputers will be interconnected in a 12 exaFLOP, 162 million core distributed AI supercomputer consisting of 192 Cerebras CS-2s and fed by more than 218,000 high performance AMD EPYC CPU cores. G42 and Cerebras plan to bring online six additional Condor Galaxy supercomputers in 2024, bringing the total compute power to 36 exaFLOPs.

Access to CG-1 is available now. For more information, please visit www.condorgalaxy.ai.

Condor Galaxy Brand Inspiration

The Condor Galaxy, also known as NGC 6872, stretches 522,000 light years from tip to tip, which is about 5 times larger than the Milky Way. The galaxy is visible in the southern skies as part of the Pavo constellation and is 212 million light-years from Earth.

About Cerebras Systems

Cerebras Systems is a team of pioneering computer architects, computer scientists, deep learning researchers, and engineers of all types. We have come together to build a new class of computer system, designed for the singular purpose of accelerating generative AI work. Our flagship product, the CS-2 system, powered by the world's largest and fastest AI processor, makes training large models simple and easy, by avoiding the complexity of distributed computing. Cerebras solutions are available in the cloud, through the Cerebras AI Model Studio or on premises. For further information, visit <https://cerebras.ai>.

About G42

G42 is a global leader in creating visionary artificial intelligence capabilities for a better tomorrow. Born in Abu Dhabi and operating around the world, G42 champions AI as a powerful force for good. Its people are constantly reimagining what technology can do, applying advanced thinking and innovation to accelerate progress and tackle society's most pressing problems. G42 is joining forces with nations, corporations, and individuals to create the infrastructure for tomorrow's world. From molecular biology to space exploration and everything in between, G42 realizes exponential possibilities, today. For further information, visit www.g42.ai.