



GET FASTER GENOMIC INSIGHTS WITH NVIDIA DGX STATION A100 AND NVIDIA CLARA PARABRICKS PIPELINES



Geneticists can now analyze whole human genomes at 30X coverage in under an hour, compared to more than a day on CPU.

With genomics data doubling every seven months, today's researchers need data center-grade performance to handle the computationally intensive steps that transform sequencing read data into useful biological information.

NVIDIA Clara™ Parabricks® Pipelines running on **NVIDIA DGX Station™ A100** creates a world-class compute framework with accelerated genomic analysis tools, enabling researchers to run multiple workflows at higher speeds to detect genetic variants using a suite of variant callers for germline, somatic, and RNA applications. DGX Station A100 is a powerful data analysis appliance that plugs into a standard wall outlet and can be placed anywhere, allowing researchers to achieve data center performance in their lab, clinic, or personal office without the need for specialized power, cooling, and denoising.

For DNA and RNA applications, running Clara Parabricks Pipelines on DGX Station A100 generates results roughly 45X faster than industry-standard workflows on CPUs. Clara Parabricks Pipelines accelerates germline analysis of both GATK4.1 and Google's DeepVariant along with a suite of somatic callers, including Mutect2, Strelka2, and Somatic Sniper, running on NVIDIA GPU platforms, delivering the same results as native CPU instances, but in minutes instead of hours or days.

Accelerating Whole Genome Sequencing

Whole genome sequencing (WGS) has been widely recognized for its comprehensive analysis and its increasing usefulness in areas such as infectious diseases and cancer. WGS examines the complete genome of an organism, while whole exome sequencing reduces the complexity of the genome by examining the genes or protein-coding regions that make up about 1 percent of the human genome. WGS requires sequencing the genome several times over (referred to as coverage) to ensure that all genetic variants can be detected. With an accelerated genomic analysis, like Clara Parabricks Pipelines, data analysis is no longer the bottleneck.

AI Supercomputing for Genomic Researchers with DGX Station A100

- > **Unmatched acceleration:** Using GATK4.1, analyze whole genomes at 30X coverage in 41 minutes with Clara Parabricks Pipelines versus 1,800 minutes on CPUs.
- > **High throughput:** Process up to 35 whole genomes per day to meet the demands of your projects.
- > **Run more workflows:** Run more analysis pipelines in less time without sacrificing accuracy or reproducibility.
- > **Get more from your data:** Increase accuracy and comprehensiveness with popular somatic and germline variant callers in Clara Parabricks Pipelines.
- > **Reduced computing costs:** Reduce power, cooling, and computing costs on DGX Station A100's four NVIDIA A100 Tensor Core GPUs versus nearly 25 CPUs for similar workflows.
- > **The performance of a data center, anywhere:** Access data center-grade computing without the need for specialized power, cooling, or noise-canceling devices.
- > **Easy to get started:** Set up Clara Parabricks Pipelines with DGX Station A100 in just 10 minutes.
- > **Dedicated support from DGXperts:** Get direct access to a global team of AI-fluent practitioners that offer prescriptive guidance and design expertise.



Additional Resources

- > [NVIDIA Clara Parabricks Pipelines datasheet](#)
- > [NVIDIA DGX Station A100 datasheet](#)

Accelerated Workflows

- > **Cancer research:** Run somatic callers, including Illumina's Strelka2, SomaticSniper, and Mutect2, to identify cancer causes and correlations.
- > **Population genomics:** Run new or archived datasets at scale to identify common variants in diseases among populations.
- > **Precision medicine:** Use genomic sequencing to identify common variants in diseases for drug discovery pipelines to help discovery-tailored therapeutics. Diagnose genetic disorders quickly in children to identify the cause of disease and deliver treatment quickly.

Get Started Today with the NVIDIA Genomics Bundle

Includes:

DGX Station A100
Three years of NVIDIA Enterprise Support
Three-year license for Clara Parabricks Pipelines, 4 GPU
Starting at \$2,800 per month for higher education institutions and \$4,000 per month for commercial entities.

To request a 30-day license for Clara Parabricks, visit: www.nvidia.com/en-us/docs/nvidia-parabricks-general

To learn more about NVIDIA Financing Solutions, visit: www.nvidia.com/en-us/data-center/dgx-leasing/

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