DELL Technologies

Solution Brief

When Life Depends on Data

HPC Life Sciences

High performance computing (HPC) systems have long been used in life sciences, enabling clinicians and researchers to run complex, compute intensive workloads. Modern life sciences workloads, such as genomics, proteomics, molecular dynamics, and bioinformatics are defined by large — and growing — data sets that require massive amounts of high-performance data and processing.

Artificial intelligence (AI) is a critical tool for analyzing life sciences data, and it requires high-performance resources. Specifically, genomic analysis is becoming a standard practice in the treatment of certain diseases, which is causing the technical requirements for genomics research to increase significantly.

To optimize budgets along with performance, it's critical to match advanced computing resources to requirements. System configuration for life sciences workloads can be a complex task, requiring a balance between workload requirements, performance targets, data center constraints and pricing.

Engineering-validated HPC solutions for life sciences

With Dell Validated Designs for HPC Life Sciences, Dell engineers have done the heavy lifting for you so you can quickly select and size the equipment and deploy a solution matching the needs of your organization. Dell Technologies can help you optimize investments based on your budget, with the ability to tune solutions for specific workloads and scale as needed with modular building blocks.

Dell Validated Designs are workload-optimized, scalable, rack-level systems that include servers, software, networking and storage that will provide you with the confidence of a performant solution while saving valuable time and resources. These flexible, scalable designs can provide fast, efficient results that enable researchers to concentrate their resources on R&D, optimize genomic pipelines for faster results and identify treatments within clinically relevant time frames.

Resources

The Dell HPC & AI Innovation Lab can help you shorten design and configuration times. Our experts will work with you to benchmark your configuration and create a solution with the right features, at the right price.

Join the HPC Community: dellhpc.org

Technical Resources

Design Guide for Dell Validated Design for HPC Life Sciences with Dell PowerEdge 16G Servers, Cost and Density Optimized

Validated Designs for HPC Life Sciences have been designed to take the guesswork out of selecting an appropriate solution for your applications, speed time to production, improve performance with purpose-built solutions and scale more easily with modular building blocks for capacity and performance. The Design Guide provides guidance for configuration options optimized for various life sciences applications and workloads such as DNA-seq, de novo assembly and molecular dynamics simulations.

Dell experts are available to assist you in designing a solution to meet your specific needs. And Dell Services — ranging from consulting and education to deployment and support — are available when and where you need them. Dell Technologies also offers a broad range of financial options, including flexible consumption models to evolve with your needs over time.

Learn more about Dell Validated Designs for HPC.

Contact a Dell Technologies Expert

View more resources on InfoHub

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