



Dell Technologies HPC and AI Solutions Help TGen Reduce Genome Sequencing Time from Two Weeks to Less Than Eight Hours

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Dell EMC Ready Solutions advance healthcare and manufacturing, improve HPC systems management and enable as-a-service models

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News summary

- New Dell EMC Ready Solutions for HPC accelerate customers' time to deliver new products and services in healthcare, life sciences and manufacturing
- New software integrations for virtualized environments simplify HPC cluster management and provisioning in private and public clouds
- Global collaborations enable HPC and AI as-a-Service

Full story

Dell Technologies (NYSE: DELL) announces new Dell EMC Ready Solutions and high-performance computing (HPC) cloud service provider collaborations to accelerate AI and advanced computing innovation in healthcare, life sciences and manufacturing.

"Innovation and world-changing ideas have always started with people thinking big," said Thierry Pellegrino, vice president, Data-Centric Workloads & Solutions, Dell Technologies. "We're committed to advancing and democratizing HPC and AI by making these technologies more accessible to the big thinkers who will shape our future."

Dell EMC Ready Solutions for HPC Genomics aid new discoveries

The new Dell EMC Ready Solution for HPC Genomics is engineered and tested to help companies get systems for genomic analysis into production quickly and economically. Modular building blocks with Dell EMC PowerEdge servers, Dell EMC PowerSwitch networking and Dell EMC storage can be configured to meet different use cases. [Specially-designed software](#) for bioinformatics and workload management can help customers process complex genomic data faster for personalized treatments and predicting disease patterns and treatment outcomes.

The Translational Genomics Research Institute (TGen) takes discoveries on common and complex diseases and translates them into patient treatments. As genomic sequencing moves from the lab into patient treatments, speed becomes even more important. TGen needs to manipulate massive quantities of data—moving it when needed, securing and managing it, and quickly processing it. With the Dell EMC Ready Solution for HPC Genomics, TGen was able to reduce genome sequencing time from two weeks to less than eight hours.

"You want clinical results back as fast as possible, so physicians can make decisions faster. You don't want to wait two or three weeks," said James Lowey, chief information officer at TGen. "With the Dell EMC Ready Solution for HPC Genomics, results are more clinically relevant, and we can have them back the same day, which is huge for patients and their families."

Designing products faster with Dell EMC Ready Solutions for Digital Manufacturing

Today's engineering teams deliver innovative products at an ever-increasing pace. Exploring different scenarios is a part of their process, but they are often limited by the ability to quickly model and simulate new options.

The Dell EMC Ready Solution for Digital Manufacturing, with [Altair Hyperworks Unlimited](#) appliances, combines Dell Technologies server, storage and networking with Altair's simulation applications and HPC middleware. Delivered as a managed service, the solution helps companies reduce HPC complexities, meet growing computing needs and run simulations at affordable costs. Available on-premises and in the cloud, engineers and scientists have easy access to HPC clusters which can improve and speed the product design process.

[Royal Enfield](#), the world's longest in-production motorcycle manufacturing company, experienced long run times for complex, dynamic events, which affected its ability to improve motorcycle design. To address this challenge, the company uses the new service for pre- and post-processing for solving complex finite element models and other analyses.

"Before, it took three or four days to do one run, and now we can do multiple runs per day," said Rod Giles, head of Computer Aided Design and Engineering at Royal Enfield. "With this service, we can more effectively influence the design of the motorcycle. The first prototype will be more representative, cutting an enormous amount of time out of the development cycle."

Dell EMC Ready Solutions with Bright Computing's [Bright Cluster Manager](#) help automate the process of building and managing modern high-performance clusters. Bright's latest release now includes integration with VMware for virtualization, containers and multi-cloud management. This also provides an easy path for HPC customers to tap into their existing VMware clusters to run more AI workloads. The software combines provisioning, monitoring and change management into one tool that spans the entire cluster lifecycle. Dynamic cloud provisioning helps customers

build a cluster in public clouds or expand their physical cluster into public clouds for extra capacity.

Advancing HPC into clouds with HPC and AI as-a-Service

The as-a-Service model provides access to HPC resources in the cloud at a price and commitment level that makes sense for customers. With these economics, teams can run data-intensive workloads, including AI and high-performance data analytics, for new and innovative use cases.

Dell Technologies collaborates with leading cloud-based HPC providers to provide managed services, hosting, colocation and on-demand resources. Through new agreements with [DXC Technology](#) in Asia Pacific and Japan, [R Systems](#) in North America and [Verne Global](#) in the Europe, Middle East and Africa locations, Dell Technologies can support organizations around the world.

For example, startup [Spire Global](#) is an analytics company that specializes in the tracking of global data sets powered by a large constellation of nanosatellites, such as the tracking of maritime, aviation and weather patterns. Spire wanted to avoid making a large upfront investment in a fixed-sized HPC system they couldn't fully utilize due to their 'bursty' usage patterns. As a result, Spire turned to HPC as-a-Service from R Systems, who customized the contract to match Spire's organic growth. This in turn allows Spire to focus solely on helping its customers manage their weather risks without the complexities of designing, managing, and maintaining HPC infrastructure and staff.

Availability

- Dell EMC Ready Solutions for HPC Genomics is globally available now.
- Dell EMC Ready Solutions for Digital Manufacturing with Altair HyperWorks Unlimited as a managed service is globally available now.
- Dell EMC Ready Solutions for HPC with Bright Computing Cluster Manager is globally available now.

Additional resources

- Connect with Dell Technologies by following [@DellTech](#)
- Visit Dell Technologies at [Supercomputing 2020 online](#)
- Join Dell Technologies' HPC Community at: <http://www.dellhpc.org>
- Learn more about Dell Technologies' HPC leadership from [Hyperion Research](#)

About Dell Technologies

[Dell Technologies](#) (NYSE:DELL) helps organizations and individuals build their digital future and transform how they work, live and play. The company provides customers with the industry's broadest and most innovative technology and services portfolio for the data era.

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