

Cutting-edge genetic research saves lives

Modern storage simplifies complex research, allowing TGen to translate genomic discoveries into treatments for cancer, Parkinson's, and other deadly diseases.



Business needs

Critical for their life-changing research, and with the aim to personalize disease treatment, TGen needed to modernize their data center to sequence billions of genomic markers faster.

Business results

- 88% reduction in footprint
- Intelligent automation allows research to process uninterrupted, 24/7
- Scale-out NVMe enables deeper data analysis
- Unified architecture future-proofs the environment

Customer profile



Healthcare | Phoenix, Arizona



“PowerStore data reduction has been great because it basically allows you to do more with less. We were able to go from 16U of storage rack capacity down to 2U. ”

James Lowey

Chief Technology Officer
TGen

Solutions at a glance

- [Dell PowerStore](#)
- [Dell PowerMax](#)

Imagine your disease being treated, or even prevented, with a drug or therapy customized to your personal genome? That future is near, due to the work of TGen, part of City of Hope. This non-profit genomics research institute based in Phoenix, Arizona, is unraveling the genetic components of cancers, neurological disorders and rare diseases to provide scientists, laboratories, and physicians with the data needed to develop breakthrough treatments that save lives.

The amount of data processed daily at TGen is staggering. There are 3 billion letters in a single human genome, and no individual has the same code. Analyzing genetic codes and other data compiled from scientific and medical collaborators all over the world requires TGen to perform trillions of IOPS per second.

James Lowey, Chief Technology Officer for TGen, needed to scale out and easily merge data from a myriad of sources, while migrating away from a legacy storage platform. He chose a Dell advanced primary storage solutions. He chose Dell PowerStore and PowerMax.

“We don’t want to spend a huge amount of time and effort moving data,” he says. “We’ve been on that train before and it’s not fun. PowerStore’s data migration feature is extremely valuable, making it easy to move large quantities of data.”

Processing power saves lives

TGen scientists needed to comingle 50 different whole genomes, running their analysis on the DNA, protein signalers and more, simultaneously. PowerStore’s adaptable architecture and containerized micro-services platform delivered.

“It’s one thing to generate the data, it’s another thing to do something with it. And that’s where PowerStore and Dell computers really come into play,” Lowey notes. PowerStore’s speeds, feeds, and resiliency really empowered us to be able to do something we just couldn’t even do before.”

As a non-profit that continuously generates petabytes of data, Lowey is mindful of storage needs, space, and cost. “PowerStore data reduction has been great because it basically allows you to do more with less,” he explains. “We went from 16U of storage rack capacity down to 2U.”

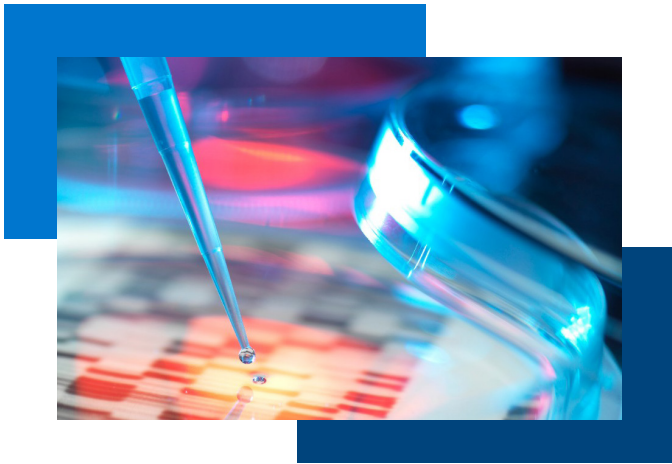
TGen further saved time with PowerStore’s simplified operations and system optimization.



“Having efficiency and performance combined on a single PowerStore platform is every CIO’s dream, because it really enables you to ensure that your IT spend is being utilized efficiently.”

James Lowey

Chief Technology Officer
TGen



“The “always on,” automated aspect of PowerStore makes life simpler, because it just works. Things are available 24/7,” Lowey enthused.

Integrating Kubernetes into DevOps

In an environment where budget and staff are relatively lean, the need to scale led TGen to look at modernizing and automating their IT infrastructure.

Lowey explains, “The ability to scale is necessary because of the volume of data coming at us, so automation is really the key. The ability to interface with CI/CD type workflows is what really provides the maximum value.”

As part of their software development strategy, TGen integrates Kubernetes into their DevOps pipeline, crediting Dell Technologies with making it possible.

“We’ve been on a mission over the last three years to move into a complete DevOps world. Dell Technologies has done a great job at bringing together storage platforms across their portfolio that makes it possible for us to automate, whether through Kubernetes clusters, CI/CD pipelines, cloud bursting, or multi-cloud hybrid environments”, Lowey says, adding, “Data gravity is a real thing. We want to go fast, we want to do more.”

Continuously modern and secure

In an ever-changing world of cutting-edge research, the continuously modern architectures of both PowerStore and PowerMax assists TGen in the rapid processing needed to push the boundaries of discovery.

“The ability to scale out NVMe across data fabrics creates the opportunity to start bringing together data sets in multiple PowerMax environments, for a deeper analysis,” Lowey notes. “This ties into what I’ll call a composable architecture, able to reconfigure things on the fly. It’s just a much more efficient way to operate.”

Equally important is the level of security needed to mitigate the potential for the ransomware attacks, that Lowey says are a challenge for any institution today.



Having the ability to load a few terabytes of data at a time into a single system to allow scientists to pull up their graphical viewers made a huge difference for us. Discoveries are happening because of PowerStore.

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The number of cyberattacks and cyber intrusions are not diminishing and they’re not going to,” he explains. “With the next gen PowerMax2500 and 8500 platform, we sleep better at night. It really ensures that our business and operations are protected.”

Keeping everyone happy

Let’s face it, keeping everyone happy is the job of IT. Lowey works directly with scientists to understand their needs, noting they frequently moved faster than his data center was able to accommodate. With PowerStore, he found a platform that can keep up, into the future.

“When we make investments in technology, we want the investment to last,” he emphasizes. “The unified architecture of PowerStore definitely makes our environment more future-proof and gives us flexibility that we didn’t have before.”

With scientists collaborating all over the world, TGen will always need the flexibility to consolidate disparate sets of data.

“Where PowerStore really shines, is its ability to ingest both structured and unstructured data, while providing efficiency and performance in a single platform,” Lowey explains. “High performance makes the scientists happy. Ensuring your IT spend is efficient makes the CFOs happy. It makes my job a lot easier.”

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