



The Leader in Clustered Storage



### Applications

Proteomics-based cancer research used to target and develop drug therapies for prostate cancer.

### Challenge

The researchers at Cedars-Sinai Medical Center's Louis Warschaw Center for Applied Molecular Medicine collect and analyze vast amounts of clinical and proteomic research data with the goals of better personalizing existing cancer therapies and developing new drug therapies. The Center for Applied Molecular Medicine required a highly scalable, high performance storage system that could easily store and provide instantaneous access to enormous repositories of proteomic data from tens of thousands to millions of patients.

### Isilon IQ Benefits

Cedars-Sinai Center for Applied Molecular Medicine evaluated Isilon IQ along with numerous other traditional and next-generation storage systems and selected Isilon IQ for its:

- Capability to meet tremendous storage and computational analysis needs
- Unparalleled ease of use and cost savings
- Mission-critical availability
- Unsurpassed scalability
- "Out-of-box" integration with custom and commercial analysis systems

## Isilon Clustered Storage Enables Cedars-Sinai to Perform Cutting-Edge Prostate Cancer and Proteomics Research

By blending state-of-the-art technology with cutting-edge research, the Cedars-Sinai Medical Center's Louis Warschaw Center for Applied Molecular Medicine aims to make life-prolonging contributions to one of the most common, and second most diagnosed types of cancer for men. By coupling Isilon IQ clustered storage with high performance computing and proteomic analyses, Cedars-Sinai researchers are collecting, analyzing and correlating troves of data with the intent of ending today's process of "best guess" medicine. With time of the essence and many of today's treatments effective for less than two percent of patients, the Center for Applied Molecular Medicine seeks to deterministically match patients with treatments that offer the best clinical outcome.

To carry out its mission, the Center for Applied Molecular Medicine uses Fourier transform mass spectrometers to analyze blood samples from tens of thousands, and one day millions, of patients; a proteomic analysis of a single drop of blood can generate more than 60 gigabytes of data. Within this data, they search for patterns of proteins that differentiate patients who respond to therapy, versus those who do not — a problem tantamount to looking for a proteomic needle in a haystack. Cedars-Sinai researchers use Isilon IQ in combination with high performance computing clusters to sort through, analyze and correlate their proteomic and clinical data to aid in the development of drug therapies and to apply current drugs to the patients who will benefit most.

After evaluating numerous storage products, Cedars-Sinai selected Isilon IQ because it offered the unparalleled ability to add data points to its studies while simultaneously keeping all information available for further analysis as patterns are detected. Isilon IQ clustered storage enables Cedars-Sinai's researchers to easily install, maintain and scale their storage and to accommodate adding more than one terabyte of new data per day. By offering unparalleled ease of use, the ability to add capacity and performance linearly or independently, and its seamless pay-as-you-grow expansion, Isilon IQ frees the Center for Applied Molecular Medicine's technical staff to focus on more important matters such as expanding their collection, refining their drug therapies and working towards treatments that save more lives.

*"Today, we are at an inflection point in the progress of cancer research. The advances in technology coupled with the sheer amount of data that we can effectively correlate for our studies enable us to find new ways to fight cancer. Isilon IQ clustered storage plays an important role in helping us to fulfill our mission and target our research so that, ultimately, we may impact peoples lives and treatments in positive ways."*

— Dr. David B. Agus, M.D., Research Director  
Cedars-Sinai Center for Applied Molecular Medicine

## Clustered Storage Helps Cedars-Sinai Focus on Finding Treatments

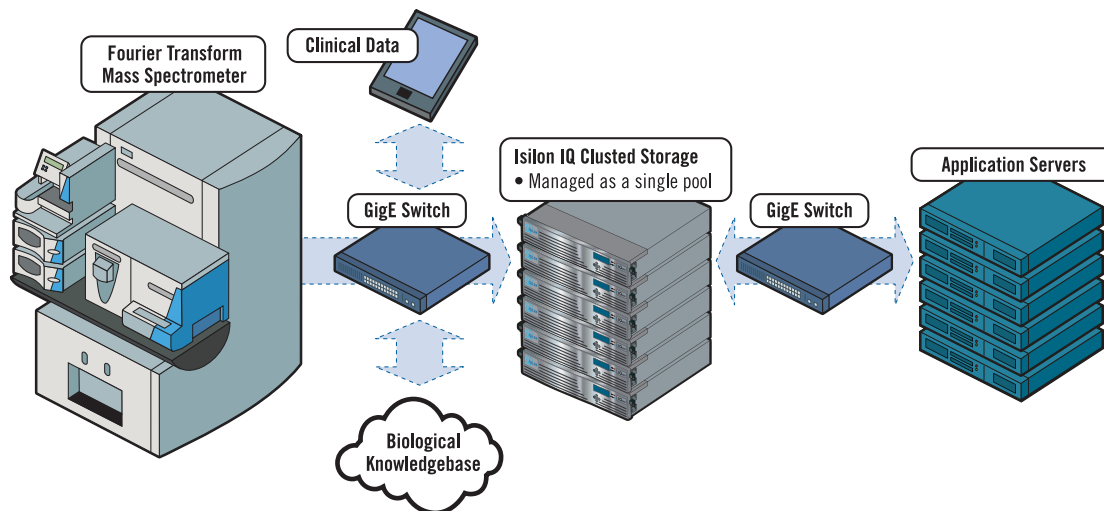
While the Cedars-Sinai Center for Applied Molecular Medicine's primary focus is to target therapies for prostate cancer, the clinical, research and technology innovations it develops could have far-reaching effects. Their research and genome-scale methodologies, coupled with the emergence of comprehensive digital patient records, have the potential to benefit other medical research. With its data reliably stored on Isilon IQ, Cedars-Sinai researchers are able to continuously expand their studies so that they can find new ways to leverage their existing data using high-performance computational analysis. These data repositories, which are greatly expanding due to the emerging trend of standardized medical records, promise to vastly increase the information that can be leveraged for life-saving research initiatives.

"Isilon's clustered storage architecture allows us to meet our most demanding performance requirements, while scaling in a modular and highly cost-effective manner," said Parag Mallick, Director of Proteomics for Cedars-Sinai Center for Applied Molecular Medicine. "As we advance our research by expanding the number of processors in our high-performance computing clusters, Isilon allows us to flexibly add performance, capacity or both in ways that are simply not possible with other storage technologies."

Isilon IQ clustered storage is ideal for storing Cedars-Sinai's research data because it can modularly scale to more than 528 terabytes in a single file system and provides researchers and analysis applications with high throughput access to a single pool of file-based storage. In addition, Isilon's OneFS® distributed file system with TrueScale™ technology enables the Center for Applied Molecular Medicine to add Isilon IQ nodes, Isilon IQ Accelerator or EX extension nodes to increase the capacity and/or performance of their clustered storage system to meet their changing research and computational requirements.

*"Isilon IQ clustered storage is very easy to manage and its scalability enables us to continually add new data points to our studies. The more targeted our research is the more lives we may ultimately be able to impact in positive ways."*

— Dr. David B. Agus, M.D., Research Director  
Cedars-Sinai Center for Applied Molecular Medicine



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