

# HudsonAlpha

CASE STUDY

PARTNERING FOR HEALTH



DIGITAL REALTY

“For HudsonAlpha, producing and moving such large amounts of data resulted in a multitude of challenges...”

HudsonAlpha Institute for Biotechnology is a nonprofit organization dedicated to innovating in the field of genomic technology and sciences to address a spectrum of biological challenges. Opened in 2008, its mission is four-fold: sparking scientific discoveries that can impact human health and well-being; bringing genomic medicine into clinical care; fostering life sciences entrepreneurship and business growth; and encouraging the creation of a genomics-literate workforce and society.

**The Client:**

Designed to be a hothouse of biotech economic development, HudsonAlpha’s state-of-the-art facilities co-locate nonprofit scientific researchers with entrepreneurs and educators. The relationships formed on the HudsonAlpha campus encourage collaborations that produce advances in medicine and agriculture.



Researchers at HudsonAlpha use state-of-the-art technologies to decipher human DNA in order to better understand how diseases are created and spread, how people can remain healthy in the face of disease, how they interact with the environment, how they respond to particular drugs and more. They also seek to do the same relative to plants, with the goal of fostering a second agricultural revolution. Through their work they hope to determine how to grow crops faster, better, easier and more cost-effectively, all while using fewer chemicals.

### **The Need to Store and Share**

On average, HudsonAlpha's Genomic Services Lab produces 15,000 to 16,000 whole genomes worth of data per year. Each of those genomes are represented as a 200 to 300-gig file, creating a massive amount of data that must be stored and analyzed. Additionally, HudsonAlpha has a strong commitment to sharing research data, placing it into the hands of those who can truly make a difference with it. Seventy to eighty percent of the data gathered by the institute is made available to scientists and researchers around the globe.

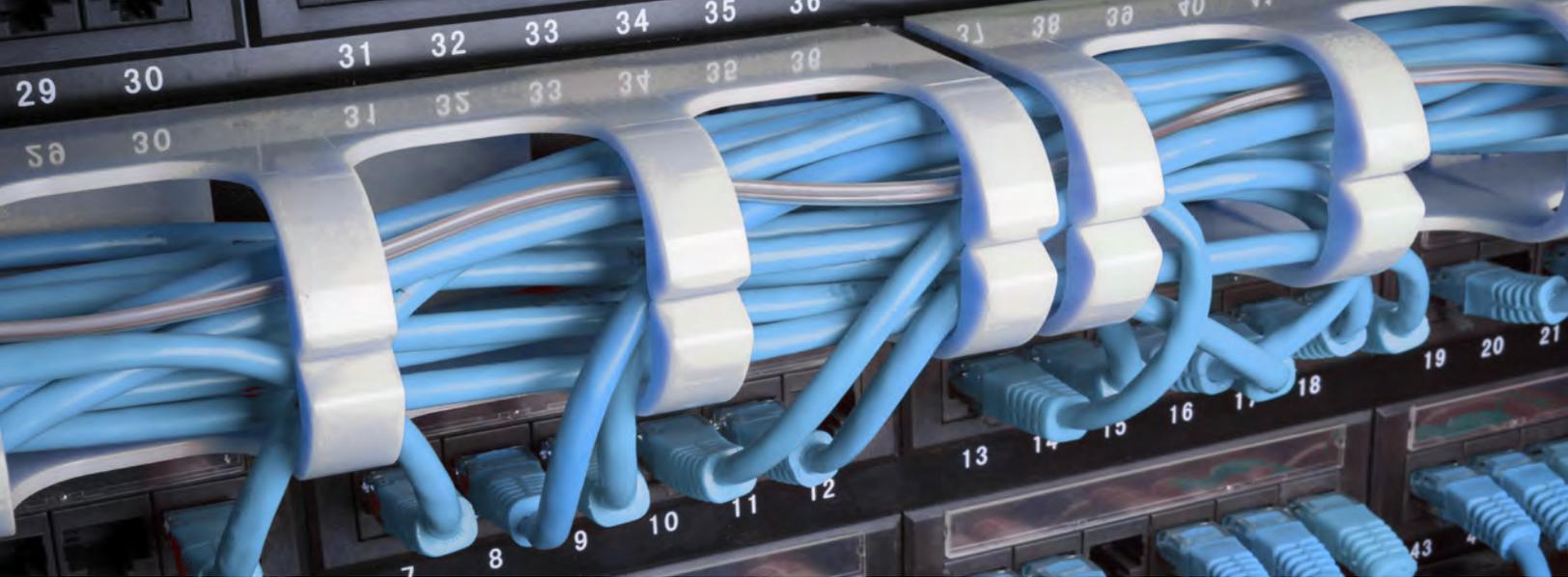
For HudsonAlpha, producing and moving such large amounts of data resulted in a multitude of challenges regarding high latency, dropped packets and other issues with network traversal. Given the importance and time sensitivity of the data transmissions, the organization needed a strong, proven solution that could keep their data durable and available, allowing them to focus on furthering scientific research.

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The interconnectivity is the important part. When you look at the massive amounts of data that we produce and the fact that 70 to 80 percent of it is going to leave this building and go to a collaborator site somewhere in the world, our tolerance for high latency, dropped packets, or issues with network traversal is very low.

Peyton McNully, Technology Director  
HudsonAlpha

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## Putting Data in the Hands of Global Experts

Each process of genetic sequencing generates petabytes of genomic data that must be stored long-term, allowing for global studies that enable scientists, both onsite and remote, to study and draw conclusions from for the betterment of all.

Given their need to share research and data across the globe, HudsonAlpha IT leadership believed a multi-site data center strategy could be the best option. After reviewing a wide variety of data center and cloud providers, they found their solution in Digital Realty.

## Guaranteeing Performance with Colocation and Interconnection

Digital Realty's colocation and interconnection services were key to HudsonAlpha's decision, providing them with strong infrastructure, and guaranteeing consistent performance and availability of their critical data. Additionally, Digital Realty was able to provide highly available, secure and scalable space and power for the organization's compute environments.

With data distributed across multiple data centers and locations, Digital Realty also enabled HudsonAlpha to take maximum advantage of next generation infrastructure. HudsonAlpha was instantly connected to the world's largest ecosystem of interconnected networks and applications, all dedicated to helping make their experience and goal a success.

## Making a Difference with Data

By partnering with Digital Realty, HudsonAlpha is able to apply state-of-the-art, advanced technologies to develop, decipher, read and understand DNA, putting it in the hands of scientists around the world who can interpret, making a difference in human life.

## About HudsonAlpha

HudsonAlpha innovates on four platforms: research-driven discovery, education, genomic medicine and entrepreneurship. HudsonAlpha connects these four endeavors into a single enterprise, making it one of

the most unique areas for genomic discovery in the country. HudsonAlpha has generated major discoveries that impact disease diagnosis and treatment, created intellectual property, fostered biotechnology companies and expanded the number of biosciences-literate people, many of whom will take their place among the future life sciences workforce. Additionally, HudsonAlpha has created one of the world's first end-to-end genomic medicine programs to diagnose rare diseases. Genomic research, educational outreach, clinical genomics and economic development: each of these mission areas advances the quality of life. Together, they are powerfully synergistic and represent the science of progress at HudsonAlpha.

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We need a place like Digital Realty so that we can negotiate these networks quite literally in the fewest hops possible, but then also have our core infrastructure available really where the middle of the Internet is, not the end of the Internet.”

Peyton McNully, Technology Director  
HudsonAlpha

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## About Digital Realty

Digital Realty Trust, Inc. supports the data center and colocation strategies of more than 1,000 firms across its secure, network-rich portfolio of data centers located throughout North America, Europe, Asia and Australia. Digital Realty's clients include domestic and international companies of all sizes, ranging from financial services, cloud and information technology services, to manufacturing, energy, gaming, life sciences and consumer products.

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