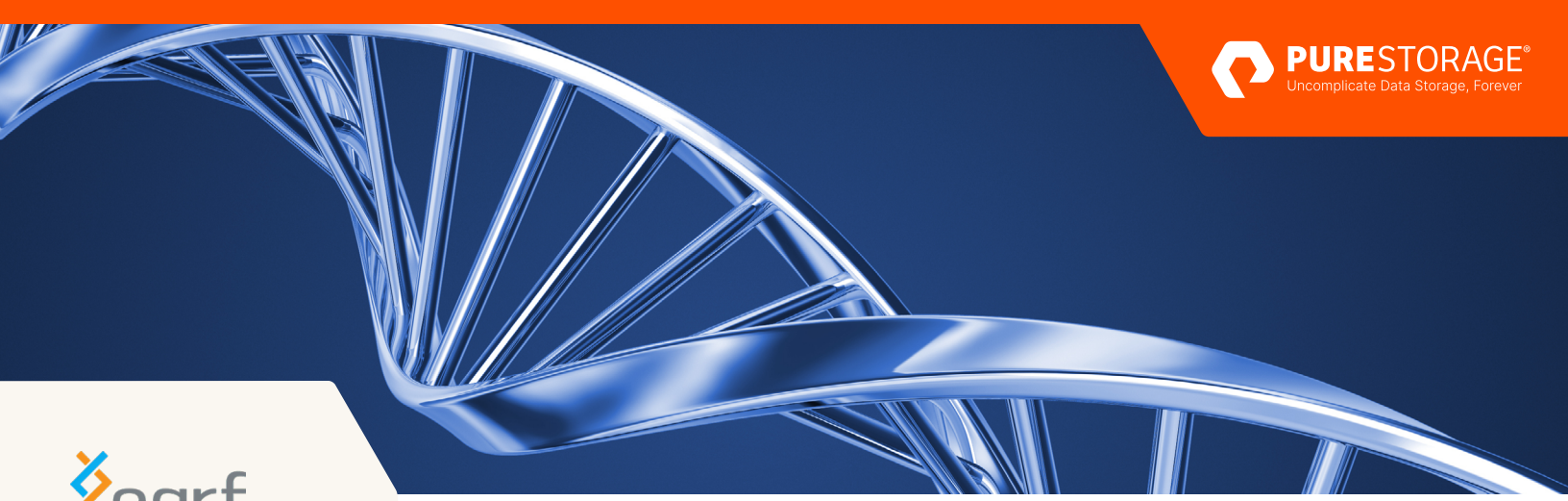

About Customer

The Australian Genome Research Facility Ltd. (AGRF) is a non-profit that aims to make the world better and more sustainable through genomics testing and research. It makes powerful genome data available to clients, fueled by the latest compute and sequencing technologies.
www.agrf.org.au

Geo

APAC

Industry

Life Sciences

Solution Area

Activate Real-Time Analytics

Products in Use

FlashBlade®

AGRF Accelerates Genomic Pipelines by up to 86% With Pure Storage

AGRF provides critical genomics data to global researchers and clinicians in the biomedical, clinical, agricultural, and environmental fields, whose work is focused on improving people's lives. From COVID-19 to climate change, it must constantly accelerate and refine its genomic analyses to support its partners' decision-making with fast, accurate data.

To fulfill this mission, AGRF replaced its legacy disk storage with Pure Storage FlashBlade, accelerating the end-to-end genomics pipeline by up to 86 percent. AGRF can now undertake groundbreaking genomics projects rapidly, including the emerging practice of personalized medicine to help improve healthcare around the world.

> "With Pure, we shaved an average of two weeks from our genomic analyses, which is as close to real-time as you can get in personalized medicine today."
>
> **DESLEY PITCHER,** NATIONAL SALES MANAGER, AUSTRALIAN GENOME RESEARCH FACILITY (AGRF)

Impact on AGRF

Brings the power of genomics to life-saving healthcare testing and research

Empowers researchers to develop innovative treatments more quickly

Achieves larger economies of scale to support more international projects

Challenges

Slow sequencing analytics for sequencing pipelines

Legacy technologies unable to meet client needs for real-time genomics data

High storage latency, low bandwidth limited adoption of new projects

Results

Sped up pre-analysis data workflows 6x, accelerating project delivery

Grew workload capacity by cutting 10-hour Checksum process to 23 minutes

Reduces turnaround time for clinical sequencing from 28 days to just 10 days

Pushing the Boundaries of Genomic Research

Personalized medicine is the holy grail of modern clinical research. Fueled by the promise of developing targeted treatments for life-threatening diseases based on each patient's molecular profile, clinicians are driving personalized medicine into the mainstream.

A primary driver for this surge is the democratization of genomic data, led by organizations like the Australian Genome Research Facility (AGRF). AGRF has helped more than 15,000 clients in the biomedical, clinical, agricultural, and environmental fields to improve people's lives by making genomics quick and accessible for their critical studies.

Greater speed and reduced costs have put genomics at the fingertips of leading researchers, whether they are exploring new forms of personalized medicine, undertaking routine clinical genomic tests, improving vaccines for COVID-19, or tackling the challenges of climate change.

"Take the human genome project," says Desley Pitcher, national sales manager at AGRF. "The first human genome cost researchers $2 billion and took 13 years to build. We can now sequence it for around $1,000 and deliver 50 in a weekend, which has been a game-changer in the biomedical field."

AGRF's genomic analyses underpin more time-sensitive research projects each day. Fast and accurate data is paramount to the success of these projects, especially for research teams fighting diseases like COVID-19 or children's cancer. Recognizing the need for speed, AGRF replaced its legacy disk storage with Pure Storage FlashBlade.

Faster Analyses Fuel Faster Breakthroughs

The first step for AGRF was to speed up its primary sequencing workflows, 90 percent of which run through industry-leading Illumina sequencers. Its analysis teams must process, analyze, and sequence raw data sets as quickly as possible, without sacrificing the integrity of results for clients. "Our analyses occur in labs but have major real-world implications, from medical teams fighting rare diseases to environmentalists conserving entire species," says Pitcher.

By replacing its legacy disk storage with FlashBlade, AGRF cut its pre-analysis times from 18 hours to just three hours. Checksum processes, which ensure the quality of data during genomics analytics, now take 23 minutes instead of 10 hours. Together, these enhancements have helped AGRF to cut clinical genome sequencing times by as much as 86 percent—going from 28 days to just 10 days, and as little as four days in urgent cases.

"With Pure, we shaved an average of two weeks from our genomic analyses, which is as close to real-time as you can get in personalized medicine today. Not only does that mean research teams get the data they need more quickly, it means life-saving fields like precision treatment for cancer are closer than ever to delivering on their promise," says Pitcher.

> "We never would have achieved these turnaround times with our old disk storage. Pure FlashBlade gives us the bandwidth, performance, and speed we need, all with lower latency."

DOUGLAS MORRISON,
ICT MANAGER, AUSTRALIAN GENOME RESEARCH FACILITY (AGRF)

The move to Pure Storage has also reduced latency and increased AGRF's input/output capacities, allowing it to take on more ground-breaking genomics projects in Australia and globally. The company signed an agreement with the Children's Cancer Institute (CCI) of Australia to support its Zero Childhood Cancer program. Fueled by Pure, AGRF works with CCI to deliver rapid, high-quality sequencing data to support the Zero Childhood Cancer Program, which currently aims to give children with high-risk cancer access to personalized medicine. The Program will be expanded to all children and young adults diagnosed with cancer in Australia over the next few years, regardless of their cancer risk or type, enabling profiling of 1,000 children every year.

"We never would have achieved these turnaround times with our old disk storage," says Douglas Morrison, ICT manager at AGRF. "Pure FlashBlade gives us the bandwidth, performance, and speed we need, all with lower latency."

Gaining a Leg Up on Rare and Infectious Diseases

Cancer research is just one of many fields where personalized medicine is expected to revolutionize the healthcare sector's approach to treatment. Genomics is also being explored to fight a range of rare and infectious diseases that express themselves in patient DNA or RNA. By drawing on each individual's genetic profile to shape their diagnoses and treatments, clinicians are shifting the emphasis of medicine from reaction to prevention.

As the world begins to understand the implications of this shift, all signs point to humanity finally gaining a leg-up on life-threatening diseases. AGRF takes this charge seriously, which is why it has invested in foundational data infrastructure that can grow and evolve with the growing list of projects it supports.

"Genomic data may affect the health of millions around the world thanks to advances in personalized medicine, not to mention the health of the world itself in the case of climate change research," says Pitcher. "We take these stakes seriously, which is why we chose Pure to help us get the right data into the right hands as quickly as possible. It really is an excellent and powerful storage solution."

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