



# Cerebral Palsy Alliance Research Institute Uses AWS to Accelerate Innovation

Using AWS, the Cerebral Palsy Alliance Research Foundation and Institute deploys a working genomics database in eight weeks, centralizes genomics data for global researchers, drives innovative research, and complies with data privacy regulations. The institute is the research arm of the Australia's Cerebral Palsy Alliance. The Alliance worked with technology partner The Glue to create a genomics database solution built on AWS, including Amazon DynamoDB and Amazon S3, which it uses to store genomics data.

## Seeking to Support Increasing Cerebral Palsy Research

[The Cerebral Palsy Alliance Research Foundation and Institute](#) (the Alliance), based in Australia, was established to fund global research to prevent and find a cure for cerebral palsy. Cerebral palsy is a movement disorder affecting more than 17 million people. The Research Foundation and Institute are part of Australia's Cerebral Palsy Alliance, which provides family-centered therapies, life-skills programs, equipment, accommodation, and support for people and their families living with cerebral palsy or other neurological and physical disabilities.

Over the past several years, the Alliance has seen an increase in the number of scientists wanting to do genetic research into cerebral palsy. This subsequently led to the formation of the International Cerebral Palsy Genomics Consortium. "When the consortium started, we had a group of 35 clinicians and researchers, and that has grown to hundreds of researchers globally," says Yana Wilson, research officer for the Cerebral Palsy Alliance. "To support this consortium, we wanted to establish a scalable, secure genomics database where researchers could share data and collaborate on projects."

## Creating a Genomics Database on AWS

The Alliance chose to move to Amazon Web Services (AWS) to create a new cloud-based genomics database. "AWS is heavily involved in genomics research, and many academic and healthcare research institutions already use its solutions," says Wilson. "In addition, AWS has a global footprint that enables the worldwide scalability we needed."

Hundreds of researchers from across the globe will be able to use the genomics database to search for genomic variants, reuse existing studies, and analyze genomics data. "By accessing existing datasets, researchers can create new cohorts from these datasets based on novel hypotheses," says Wilson.

## Giving Researchers Standardized Access to Terabytes of Data

The Alliance engaged technology partner [The Glue](#), a Consulting Partner in the [AWS Partner Network](#), to design and implement a genomics database platform on AWS.

The solution runs on [Amazon Elastic Compute Cloud](#) (Amazon EC2) instances and uses [Amazon DynamoDB](#) and [Amazon Simple Storage Service](#) (Amazon S3) to store genomics data. Additionally, Alliance developers use [Amazon API Gateway](#) to create and monitor highly secure APIs at scale. "We designed the platform to scale long-term, with the

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**Creates and deploys genomics database into production in 8 weeks.**



**Company:** Cerebral Palsy Alliance Research Foundation and Institute  
**Industry:** Life Sciences  
**Country:** Australia  
**Employees:** 20–50  
**Website:** [cerebralpalsy.org.au/our-research/research-foundation-and-institute](https://cerebralpalsy.org.au/our-research/research-foundation-and-institute)

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## About the Cerebral Palsy Alliance Research Foundation and Institute

The Cerebral Palsy Alliance Research Foundation and Institute, part of Australia's Cerebral Palsy Alliance, funds global research into the prevention, treatment, and cure of the movement disorder.

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## Benefits

- Develops and deploys working genomics database in 8 weeks
- Centralizes genomics data for global researchers
- Drives innovative cerebral palsy research
- Ensures compliance with data privacy regulations

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## AWS Services Used

- [Amazon API Gateway](#)
- [Amazon DynamoDB](#)
- [Amazon Elastic Compute Cloud](#)
- [Amazon Simple Storage Service](#)

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Yana Wilson, Research Officer,  
Cerebral Palsy Alliance

appropriate security controls in place to manage sensitive patient and research data,” says Allan Dall, chief executive officer of The Glue. “We made sure that the researchers can access terabytes of data in a standardized way.”

The Glue helped the Alliance quickly build and deploy a database by updating its previous design. “We took the original design, reworked it, and delivered a working solution in eight weeks,” says Dall. “That was only possible because of the agility and speed of AWS, which helped us to move very quickly after the initial planning. We could not have done that using a traditional on-premises infrastructure, where it would have taken us weeks just to order servers.”

#### **Driving Innovative Cerebral Palsy Research**

This project means researchers and clinicians will be able to access a centralized database to determine if someone else has identified a variant in a gene of interest. “We want researchers and clinicians to get access to data fast,” says Wilson. “If a clinician has a case with novel genetic variants, they will be able to quickly search the AWS-based database to find out if the genes or variants have been identified in any individual or dataset. This really accelerates the time to discovery.”

Global researchers will use the database environment to conduct innovative cerebral palsy research. Cerebral palsy has been attributed to a wide range of environmental risk factors; however, the specific cause is often unknown. As an example, a researcher is studying cases of cerebral palsy with no known cause. “These are cases where a child has a normal neurological presentation on an MRI but still has the condition,” says Wilson. “We hope that by using genetics and combining it with existing data in the database, we might ultimately be able to better understand the underlying biology of the condition.”

#### **Ensuring Compliance**

By running its solution on AWS, the Alliance is helping to ensure data privacy so researchers using the database are compliant with the General Data Protection Regulation (GDPR). Dall says, “The built-in security capabilities in AWS solve so many issues that would otherwise have to be developed and maintained by us at a significant cost to the Alliance.” Wilson adds, “This is very important for the researchers putting their data into the platform. Even though all data is de-identified, we want to make sure we can secure it as much as possible.”

#### **Increasing Collaboration**

The Alliance is now working to enhance its genomics database to support more collaboration. “This solution is highly scalable because of AWS,” says Wilson. “As we add more users and different types of researchers, such as laboratory biologists, these researchers will be able to communicate rapidly with clinicians to collaborate and validate the genetic findings that may lead to potential, novel therapeutic targets.”