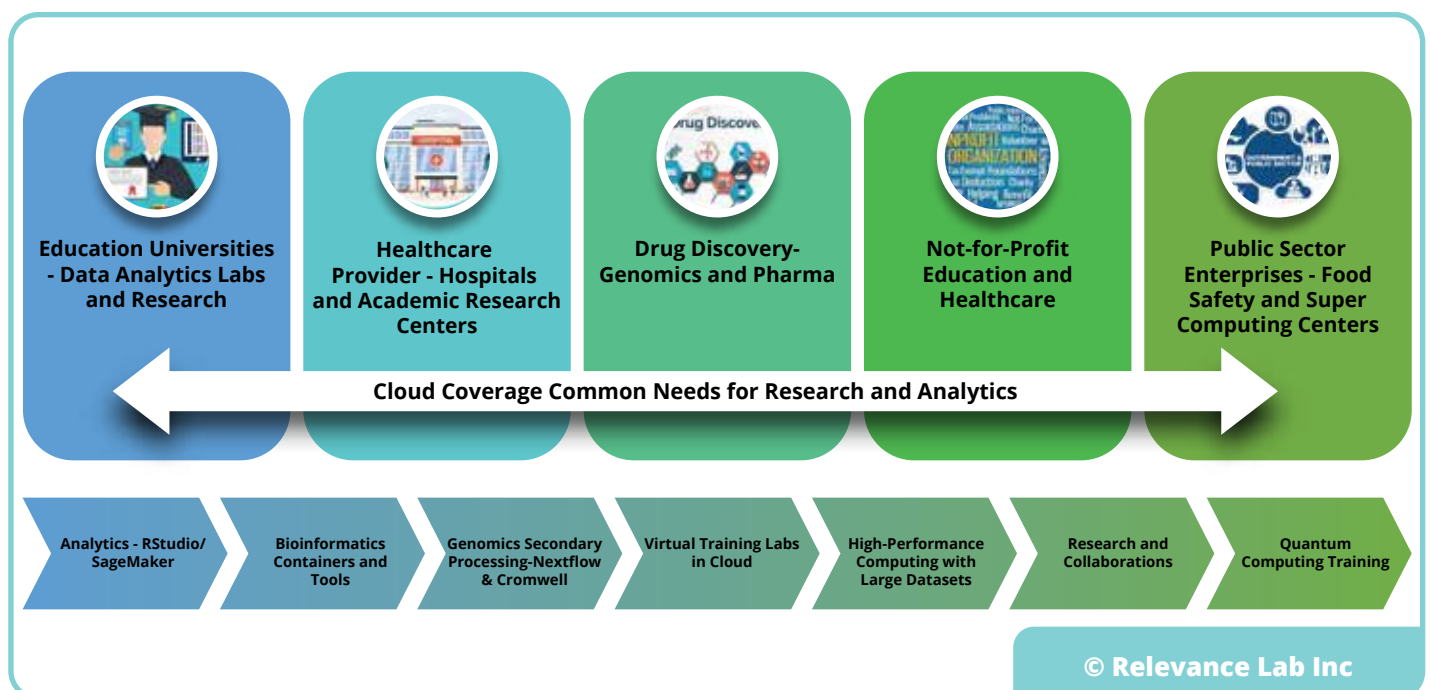


Powering Frictionless Scientific Research for Better Human Lives with Research Gateway

Our goal, at Relevance Lab (RL), is to make scientific research in the cloud ridiculously simple for researchers and principal investigators. Cloud is driving major advancements in both Healthcare and Higher Education sectors. Rapidly being adopted by various organizations across these sectors in both commercial and public sector segments, research on the cloud is improving day-to-day lives with drug discoveries, healthcare breakthroughs, innovation of sustainable solutions, development of smart and safe cities, etc.

RL addresses this issue with Research Gateway, a self-service cloud portal that allows customers to run secure and scalable research on the AWS cloud without any heavy-lifting of set-ups. In this brochure, we will explore different use cases that simplify their workloads and accelerate their outcomes with Research Gateway. We will also elaborate on two specific use cases from the healthcare and higher education sector for the adoption of Research Gateway Software as a Service (SaaS) model. Research Gateway is solving the problems for the following key customer segments:

Research Gateway Top Customer Segments and Use Cases



Case Study 1: Accelerating Virtual Cloud Labs for the Bioinformatics Department of Singapore Higher Education University

Classroom Needs: Primary use case to enable Student Classrooms and Groups for learning Analytics, Genomics Workloads, and Docker-based tools.

Research Needs: Used by a small group of researchers pursuing higher degrees in Bioinformatics space.

Addressing the Virtual Classroom and Research Needs with Research Gateway

The SaaS model of Research Gateway is used with a hub-and-spoke architecture that allows customers to configure their own AWS accounts. The primary solution includes:

- Professors set up classrooms and assign students for projects based on semester needs.
- Usage of basic tools like RStudio, EC2 with Docker, MySQL, Sagemaker.
- End-of-day automated reports to students and professors on server “still running” for cost optimization.
- Ability to create multiple projects in a single AWS Account + Region for flexibility.
- Ability to assign and enforce student-level budget controls to avoid overspending.

Case Study 2: Driving Genomics Processing for Cancer Research of an Australian Academic Medical Center

While the existing research infrastructure is for on-premise setup due to security and privacy needs, the team is facing serious challenges with growing data and the influx of new genomics samples to be processed at scale.

Addressing Genomic Research Cloud Needs with Research Gateway

RL addressed the genomics workload migration needs of the hospital with the Research Gateway SaaS model using the hub-and-spoke architecture. The following primary solution patterns were delivered:

- Migration of existing HPC system using Slurm Workload Manager and Singularity Containers.
- Using Cromwell for Large Scale Genomic Samples Processing.
- Using complex pipelines with a mix of custom and public WDL pipelines like RNA-Seq.
- Large Sample and Reference Datasets.
- AWS Batch HPC leveraged for cost-effective and scalable computing.
- Specific Data and Security Needs met with country-level data safeguards & compliance.

Conclusion

Relevance Lab, in partnership with AWS cloud, is driving frictionless outcomes by enabling secure and scalable research leveraging Research Gateway for various use-cases. By simplifying the setting up and running research workloads in a seamless manner in just 30 minutes with self-service access and cost control, the solution enables the creation of internal virtual labs and acceleration of complex genomic workloads.

To know more explore the solution at <https://research.rlcatalyst.com>

OR

feel free to write to marketing@relevancelab.com