

# Secure Research Computing Platform

Simplify Research on AWS with GenAI Tools, Data Science, HPC workloads for Regulated Data

## Challenges

Researchers want to focus on Science and not complexity of cloud servers, data security, cost controls. Research IT departments challenge is to provide suitable flexibility with enterprise controls.

Modern scientific research demands seamless access to large datasets, high-performance computing infrastructure (e.g., GPU clusters), and advanced research and analytics tools (e.g., SageMaker, HPC, Bedrock) without requiring deep cloud expertise. At the same time, managing sensitive data governed by stringent compliance standards (e.g., NIST 800, HIPAA) requires Research IT to maintain robust controls across compute, data, applications, security, and cost. Striking the right balance between flexibility and compliance in large-scale, multi-account cloud environments, while ensuring secure data lifecycle with controlled ingress/egress, and enabling access to cutting-edge AI/ML tools requires a comprehensive, self-service research platform.

## Research Gateway Solution

Simplified Self-Service Cloud Portal for Research powered by enterprise-grade and open-source (AWS RES) solutions that ensure scalability and cost-efficiency.

Higher-Education, healthcare, and research institutions are managing increasingly large datasets, alongside growing collaboration between data producers and consumers. This shift requires research computing to be data-centric, offering effortless access to widely-used research applications on the cloud. The Research Gateway offers secure, compliant cloud foundations, end-to-end data lifecycle management, orchestration of research computing workloads and apps, and intuitive self-service capabilities. With features like audit controls for compliance tracking and robust cost management tools, Research Gateway empowers researchers to innovate faster while maintaining security, compliance, and budget efficiency.

## Benefits

**Researchers** gain a self-service portal with 1-click access to apps, high-performance computing, and data, enhancing productivity and streamlining workflows. **Research IT** benefits from robust security, compliance, efficient data management, cost controls, and simplified deployment.

### » Self-Service Models without Cloud Complexity

Researchers gain a simple, project-based design that combines data, computation, apps, budgets, and collaboration through a simple web interface. Cost tracking provides control and flexibility.

### » Scalable Research with Security and Compliance

Sensitive data is managed securely with self-service portals on cloud landing zones. These ensure compliance, controlled workflows, and secure collaboration for Research IT, investigators, and data stewards.

### » Access to GPU Clusters, AI Tools, Easy Collaboration

Researchers benefit from GPU clusters, AI tools, and high-performance computing. These resources streamline workflows, support collaboration, and ensure efficient data sharing with managed ingress and egress approval processes.



**Effortless Self-Service** Without Cloud Hassles



**Secure, Scalable, and Cost-Effective** Research



**Access to GPUs, AI tools, & seamless** collaboration

# Research Gateway on AWS

Built in partnership with the AWS Research Computing group, Research Gateway is designed to simplify the adoption of cloud solutions for evolving research needs. Transitioning from on-premises to the cloud can be complex, but with a focus on proper planning, well-architected frameworks, and tailored managed services, Research Gateway ensures a seamless migration experience. Whether customers prefer to build or buy, use open-source or enterprise solutions, or integrate with existing systems, Research Gateway and AWS Research & Engineering Studio provide tailored solutions. With seamless IAM integration, compliance support, and customization options, we empower researchers while offering ongoing support and managed services for a hassle-free experience.



## Case Study

### Enhancing Research for Health Sciences Group of a Top Tier US Higher-Ed Institution

#### »» Challenges

Health Sciences group of customer needed GPU-based compute, SageMaker Studio for AI/ML tools, and a secure data enclave with stringent NIST 800 ingress/egress controls and IAM integration (Shibboleth, Entra ID).

#### »» Solution

A customized Research Gateway integrated with their AWS Cloud Landing Zone, creating two environments for standard and secure research. It streamlined large dataset migration, simplified onboarding for researchers and projects, and offered access to shared tools. With project-specific accounts and budget tracking, it ensured compliance, scalability, and flexibility.

#### »» Results

The self-service deployment model enabled researchers to manage project-specific AWS accounts while maintaining budget oversight. This streamlined the migration of on-premise workloads to the cloud, offering superior speed and flexibility. By aligning with research administration and data compliance workflows, the solution balanced robust IT controls with the agility required by researchers. The solution accelerated the institution's ability to drive innovation in medical AI and beyond.



## Features

### Scalability and Simplicity

A comprehensive Research Computing solution designed for large institutions, addressing Infrastructure, Compliance, Data Lifecycle Management, Research Orchestration, and a Self-Service Portal. This unified approach meets the diverse needs of Researchers, Research IT, Data Administrators, and Principal Investigators with streamlined efficiency.

### Flexible Deployment Strategy

Catering to preferences for enterprise or open-source solutions, the setup ensures cloud-based Research Computing integrates with existing systems and on-premises workloads. With options like the Research Gateway and AWS Research & Engineering Workbench, combined with professional services, Relevance Lab provides a comprehensive Plan-Build-Run deployment approach tailored to customer needs.

Visit [AWS Marketplace](#) or [Relevance Lab website](#) to purchase or start a Free Trial today.



## Get started with Research Computing solutions on AWS

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