CASE STUDY

Scaling Your Compute Environment:

How An Emerging Biotech Leveraged RCH's Proven Cloud Computing Expertise to Improve Dataflow Efficiency and Value

The following case study outlines how RCH Solutions developed Cloud-based workflows for data pipelining and 3rd-party integrations, as well as a plan to improve computing at scale for tertiary workloads/analyses within an emerging Biotech focused on empowering precision medicine.

Challenge

Data Pipelining and Collaboration within a Growing Biotech

A biotechnology diagnostics company headquartered in Arizona opened a second location in San Carlos, Calif., to expand its scientific objectives. Quickly, the need to evolve its scientific computing environment became apparent. The company struggled with dataflows that didn't allow for seamless processing and sought to move and automate data integrations and workflows from creation to value.

To support this goal, the company looked to the Cloud. However, migrating applications, workflows, and processes from on-premise environments to the Cloud requires a unique skill set and the experience to adapt to the specific environment for scientific computing, wherever it may reside. Specifically, the Biotech needed Life Sciences compute expertise and execution support to account for the following critical considerations:

- Accommodating the unique needs of the R&D team while balancing the company's data security priorities and protocols
- Transitioning applications, data, and storage to the new environment without disruption
- Managing and sustaining availability
- Generating buy-in and acceptance by the organization's leadership

As expressed by the company's leadership, the priority for this initially proposed engagement was integrating services and automated bidirectional movement of data generated on-premise between the Amazon Web Services (AWS) Public Cloud and Seven Bridges, a leading biomedical data company and critical partner for the organization.

Solution

A Proven Computing Partner

Providing targeted IT services exclusively to Biotech and Pharma organizations since inception, RCH has proven itself a reliable and skilled partner through past projects with the Biotech's Chief Scientific Officer at the time, who previously led a similar effort for a larger organization. With a team that included IT and Bio-IT professionals and individuals with advanced degrees in the sciences, RCH was called on and uniquely positioned to provide IT services in the near term and as their needs evolved.

To initiate this project, RCH met with the company's Chief Scientific Officer and others to understand the compute requirements and expectations. In summary, the needs included a sophisticated data and Cloud compute workflow, one that could:

- Automatically migrate data generated in San Carlos to a newly established AWS Cloud environment
- Support data analysis by Seven Bridges through workflow automation
- Generate and push results back through the Biotech's AWS environment for streamlined evaluation and analysis in the San Carlos facility

To facilitate this targeted workflow, the company needed AWS-hosted scientific compute support run against raw-from-on-premise data and interim results data from Seven Bridges. The initial ask in this realm also included compute support for R and Python workloads and using R Shiny.

Results

Faster and More Efficient Data Processing and Collaboration

Over the next 14 weeks, RCH engineered, built, and supported the needed compute services in AWS. Additionally, RCH drove the automation of data movement from on-premises data repositories to the new compute service and to and from Seven Bridges. Special attention was paid to Information Security, including auditing and tracking of activities within AWS, which was of chief concern for the Biotech's executive leadership team.

The result was faster and more efficient processing of data. While the initiative was considered "foundational," as the original objectives did not preclude additional capabilities, scale, or workflows being designed and implemented, the Biotech fully leveraged the depth and breadth of RCH's knowledge and skills to accomplish its compute goals and drive value well beyond the limits of this project's scope.

Overall, the company found RCH's "fit-for-purpose" approach, in-depth understanding of the team's challenges, unique and strategic approach to solutioning, and ability to deliver with accountability and transparency to stand out among other vendors.

According to their then-Chief Scientific Officer*, "RCH is an advocate in computing speak, and science speak. They understand stakeholders, listen and ask the right questions without jumping to conclusions, support the decisions you make, and are rigorous in their pursuit to deliver on time and budget. Finding a partner who can deliver on all that is a real rarity. In short, you can trust them to help you meet your goal."

Note: The Biotech's Chief Scientific Officer moved on from the company following the completion of this project.

About RCH Solutions

RCH Solutions (RCH) is a global provider of Bio-IT expertise, helping Life Sciences and Healthcare companies of all sizes clear the path to discovery. For more than 30 years, RCH has provided focused experience and unmatched specialization in designing and deploying cross-functional IT strategies, supporting R&D infrastructure, and offering workflow best practices that solve enterprise and scientific computing challenges.

Are you interested in working with us?

Contact the RCH team to learn how we can support your advanced scientific computing and IT needs.
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