CASE STUDY

Building for the Future: How RCH Solutions Helped This Growing Biotech Realize Their AWS Cloud Compute Goals

Challenge

Evolving a QuickStart Cloud Compute Environment for Extensibility & Scale

This growing biotech, located in San Francisco, California, was founded in 2012, and operates an indication-agnostic discovery engine for the development of cell permeable macrocyclic peptide therapeutics. Securing $66 million in series C financing in mid-2021, the company was picking up momentum and saw its compute needs evolving. The team sought a partner to support the strategic evolution of its AWS Public Cloud infrastructure and compute workflow hosting, taking what was a single AWS account deployment and building toward the future with a federated, multi-account approach, targeting security, control, extensibility, and resource isolation(s).

Solution

A Multi-Governance Cloud Infrastructure Built to Reflect The Organization's Unique R&D Needs

Led by their Research Informatics and Computational Chemistry leader, the company selected RCH Solutions as the specialized partner to develop and lead the execution of a long-term strategy to evolve this biotech's compute environment utilizing the AWS Cloud platform.

"Having worked with RCH during my time in the Global Pharmaceutical space, I was very confident they were the right partner to lead the project here. The depth and breadth of their team's knowledge and experience in supporting research compute initiatives is unmatched, and we found tremendous value in their ability to both develop the strategy and lead the execution and ongoing services for our environment."

Working directly with our sponsor at this organization, internal IT staff, research scientists, and application vendors, RCH Solutions proposed a comprehensive plan to be executed in phases, with the goal of delivering an optimum scalable solution and robust support roadmap. Phase 1 of the plan included:

- AWS Foundational focus,"multi-account" model for AWS processing – encapsulating processing for both equitable consumption of resources and "limiting the blast radius" should something experimental go awry.
- Infrastructure support (Enterprise), including shared services accounts for key IT services such logging, security, and for DNS, Directory Services, or the like (where AWS Cloud-native is not applicable).

- Infrastructure as a Service (IaaS) in AWS (aka EC2) enabled by engineered Linux Server and Windows Server builds; standardizing deployments, Directory Service and 2-Factor Authentication integration, and consolidated Operating System logging.
- Evolution of the BioAssay Database, splitting the current working environment into a Dev and Prod set of AWS accounts (or non-Prod and Prod, respectively).
- Research Compute, splitting such into a separate AWS account, leveraging the scoped Linux Server build including integration with the company's Enterprise Directory service, and establishing Elastic File System (EFS) and Simple Storage System (S3) data storage services for shared data and applications.
- Governance & Security, establishing access security, monitoring and permissions for all Cloud users and devices, through selected vendor platform.

In addition, RCH proposed and implemented a range of solutions specific for fast-moving research environments, adapting AWS Cloud best practices to fit a multi-governance model in accordance with the unique needs of teams conducting scientific R&D. Among them, the RCH team proposed the following:

- Infrastructure as Code (IaC) via AWS CloudFormation (excluding AWS Account Creations, Turbot stand-up, and initial configurations).
- Operation System Configuration Management (build-automation) via Ansible.
- Turbot configuration(s) for: IT Services hosting, Research Prod hosting and Research non-Prod / Innovation hosting
- CloudWatch/CloudTrail as Cloud-native log collection / alerting / alarming.
- 2-Factor Authentication not recommended for HPC or other batch/compute-at scale components.

Result

An AWS-Public Cloud Foundation Built to Support Future Innovation at Scale

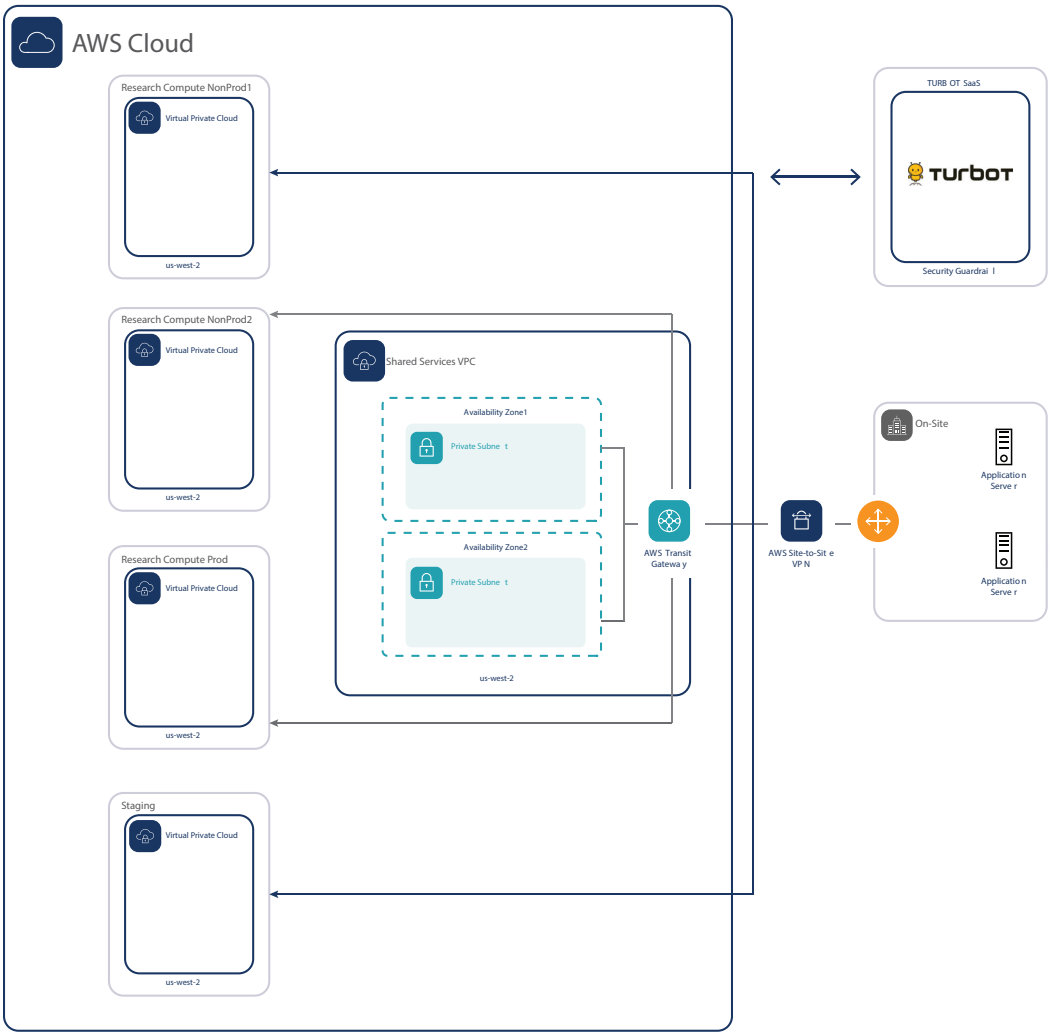
By the end of its initial engagement, RCH had successfully established a Foundational Cloud platform upon which this organization can continue to advance its drug discovery goals.

As a result, RCH was asked to provide ongoing support and services as the company moves into the future.

Roadmapping for Phases 2 & 3 of the Cloud effort has begun.

"With RCH's help, we've built a flexible and scalable Cloud platform that will power research performance for our team into the future. I'm looking forward to working closely with RCH to continue to optimize our environment for scientific computing and, ultimately, advance our team's discovery objectives."

AWS SITE2SITE VPN CONNECTIVITY



About 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 designing and deploying cross-functional IT strategies, supporting R&D infrastructure, and offering workflow best practices that solve enterprise and scientific computing challenges. Learn more at www.rchsolutions.com or contact our team at discovery@rchsolutions.com.

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