



Client Overview

- The Client is a genetic engineering company that drives research and innovation on RNA splicing errors



Application Overview

- Report generation implemented within the existing Ruby on Rails application by integrating an R engine, which is triggered internally with dynamic parameters. The Reports are generated as HTML in R and rendered in RoR



Business Requirement

- Integrate R programming with the application, for report generation and deploy on cloud
- Generate the report for the experiment within a minimum time frame



Our Solutions

- Updated the report generation application built on RoR to cater to the new requirements
- Incorporated an R programming engine that reads an input .txt file to create an HTML Report which would then be rendered using RoR in the application
- Leverage Ruby on Rails capabilities to split multiple tabs into individual rails reducing the wait time
- A dynamically generated .txt file is saved in the rails repository while running a report, which is overwritten for new inputs, eventually saving disk space
- Generate .Rdata file on the first run, so consecutive runs will load the reports faster rather than going through all files
- Containerization using Dockers



Business Impact

- Report Generation Time: Report generation time was reduced by 75%, to just 15 seconds
- Maintenance: Dockerized Cloud deployment improved the availability and maintainability of the application
- Ease of use: Complexity of the Ruby on Rails code in the application was reduced significantly improving efficiency
- Report Load Time: Generation of .Rdata file reduced the loading time of the Reports by nearly 30%.



Tools

- Ruby on Rails, R, Docker, Microsoft Azure Cloud