

SUCCESS STORY



ENHANCED SECURITY OF CLIENT'S AI-POWERED, CLOUD-BASED, RNA SEQUENCING ANALYSIS APPLICATION

ABOUT CLIENT

An innovative genetic engineering company which analyses biomedical data to accelerate the development of innovative therapeutic solutions through RNA splicing analytics and artificial intelligence.

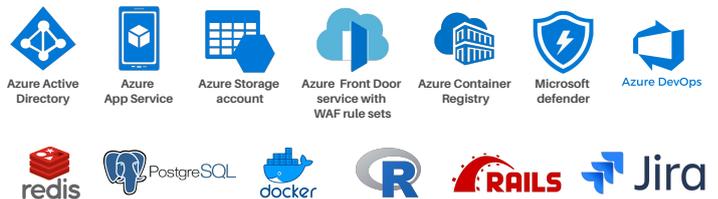
BUSINESS

DevSecOps

DOMAIN

BioPharma, Life Sciences

TECHNOLOGIES



KEY HIGHLIGHTS

- Improved security and enabled automated pipeline deployment from patched container
- Implemented the zero-trust model with application delivery in the Azure infrastructure by leveraging Azure Active Directory service, Azure Vnet private endpoint service and Azure Front Door service to the run the application and infrastructure in a secured isolated environment.

PROJECT OVERVIEW

- End-to-end implementation of a DevOps pipeline for the application to identify/fix the security vulnerabilities
- Enhance the existing web application by simplifying tentation layer in the database & existing workflows
- Built a scalable security model which can handle addition of multiple users, regions or applications

BUSINESS PROBLEM

- Existing application had several security vulnerabilities which could result in a malware attack to extract sensitive genetic data, patents/ IPs, etc.
- Lack of scalability for the existing solution in terms of security which would require enabling security protocols repeatedly for multiple users & regions
- Lack of continuous monitoring of Development & Production environments for security vulnerabilities
- Lack of automated deployment pipelines to Azure portals with periodic updates

SOLUTIONS

- Indium developed an end-to-end solution with a robust DevOps pipeline by leveraging Azure DevOps service and made sure all the vulnerabilities listed by the client had been handled with security fixes & enhanced security measures.
- Implemented enhanced ADO configuration to make the Container Base image and application container image as deployable common artifacts to deploy in any environment.
- Integrated Microsoft Defender service with Azure Container Registry service to scan the container images periodically to identify the vulnerabilities.
- Implemented the auto patch update of the container image in the docker build process to as a preventive action.
- Completely rearchitected the database, storage, cache, optimized queries for better performance and table structure/schema

validations

- Enabled Web Application Firewall (WAF) rule sets in Azure Front Door service to prevent unauthorized access to the backend application and Azure services.
- Implemented Data security in transit by configuring HTTPS protocol in database service, Storage account and Redis cache service. Enabled SFTP only connection in application to restrict insecure uploads.
- Setup PostgreSQL & Redis Cache behind private endpoints & with VNETs enabled to restrict the unauthorized access on backend services and applications.
- VAPT performed for development & production environments to ensure zero security vulnerabilities post the deployment of the application
- Tested the deployed application and ensured there is no degradation in application performance through performance checks
- Enabled seamless horizontal & vertical scalability of the solution with the same security protocols to accommodate new users/ regions/ applications

BUSINESS IMPACT

- Achieved over 75% reduction in storage cost for containers
- Elevated performance levels despite the various security measures in place

ABOUT INDIUM

Indium Software is a leading provider of Digital Engineering solutions with deep expertise in Application Engineering, Data and Analytics, Cloud Engineering, DevOps, Digital Assurance and Gaming.

Over the past decade, Indium has built strong relationships with over 100 clients spanning ISVs, Global 2000 as well as born-digital companies across North America, India, Europe and the Asia-Pacific region, and with ecosystem partners such as AWS, Mendix, Striim, Denodo and Claris.



USA

Cupertino | Princeton
Toll-free: +1-888-207-5969

INDIA

Chennai | Bengaluru | Mumbai
Toll-free: 1800-123-1191

UK

London
Ph: +44 1420 300014

SINGAPORE

Singapore
Ph: +65 6812 7888

www.indiumsoftware.com



For Sales Inquiries
sales@indiumsoftware.com



For General Inquiries
info@indiumsoftware.com

