

Client:

TMHighland, a leading property and casualty underwriting agency based in the USA, offers a wide range of speciality risk management solutions, including private flood, fine art, speciality property, real estate investment, and lender-placed insurance.



Enabling Technologies



AWS API Gateway



AWS Elasticbeanstack



AWS ElastiCache (Redis)



AWS Cognito



AWS Network Load Balancer



Glue Jobs



PowerBI



Business /Objectives



TMHighland faced challenges in developing and deploying a highly scalable web application and API infrastructure. Their objectives included automating deployment processes to reduce time-to-market, implementing robust auto-scaling capabilities to handle variable workloads efficiently, ensuring seamless integration with essential AWS services (Amazon RDS, ElastiCache, Cognito), and maintaining the highest standards of security through regular updates. The overarching goal was to create a responsive and resilient system capable of meeting the dynamic requirements of a growing user base.

Solutions Delivered



Bourntec addressed TMHighland's challenges by deploying a scalable web application and API using AWS Elastic Beanstalk and AWS API Gateway. The architecture flow involves the request from the client reaching the API Gateway after authentication by AWS Cognito. This request is then handled by Node.js code running in AWS Beanstalk, facilitated by the AWS Network Load Balancer. Beanstalk is connected to a PostgreSQL database running in AWS RDS and AWS ElastiCache Redis for caching. Additionally, TMHighland's Eligibility API communicates seamlessly with Rate Engine and Python API services hosted in a similar AWS setup. Glue Jobs are utilized for data transformation and integration tasks, while PowerBI reports enhance visualization with comprehensive dashboard pages and graph reports. Integration with AWS services such as RDS, ElastiCache, and Cognito ensures enhanced functionality, security, and real-time monitoring. AWS API Gateway facilitates RESTful API deployment with features like throttling and caching for optimal performance and robust security. Effective version management ensures smooth transitions for users, while regular updates maintain system integrity.

Results



The project resulted in the successful deployment of a scalable web application and API infrastructure, meeting TMHighland's objectives. The automated processes provided by AWS Elastic Beanstalk reduced deployment times and increased overall operational efficiency. Robust auto-scaling capabilities ensured seamless handling of varying workloads, delivering a responsive user experience. Integration with AWS services enhanced functionality, security, and real-time monitoring. The use of AWS API Gateway allowed for the creation of a performance and secure API. Glue Jobs and PowerBI reports further augmented data transformation, integration, and visualization, culminating in a comprehensive solution that meets the dynamic needs of TMHighland's growing user base.