

Abstract

This project showcases the development and deployment of a globally accessible library webpage hosted on AWS, highlighting scalability, performance, and security. The objective was to create a user-friendly platform leveraging AWS services such as Amazon S3 for static content storage and Amazon CloudFront for global content delivery (AWS, 2024a). Infrastructure as Code (IaC) principles were applied using Terraform, ensuring repeatable and efficient resource deployment (HashiCorp, n.d.).

The webpage features essential content, including library announcements, upcoming events, and facilities for user interaction. Optimized configurations ensure high availability and low latency for a seamless user experience, regardless of geographic location. Stringent security measures, including bucket policies and OAI, were implemented to restrict unauthorized access (AWS, 2024b). Additional monitoring using AWS CloudWatch provided real-time insights into performance and resource utilization (AWS, 2024c).

Through iterative feedback and testing, the final infrastructure was refined to meet both functional and non-functional requirements. This project demonstrates the potential of AWS services for hosting scalable, secure, and globally distributed applications, serving as a template for similar web hosting solutions.