**Technical Overview**

**Title: Static Website Hosting on AWS Using Terraform**

**Unit Code**: DLBSEPCP01\_E  
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**Project Summary**

This project demonstrates how to deploy a static website on Amazon Web Services (AWS) using Infrastructure as Code (IaC) principles with Terraform. The objective was to host a basic HTML site globally with high availability, low cost, and secure HTTPS access — all managed in code.

**Technology Stack**

* **AWS S3** was used to host the static HTML file.
* **AWS CloudFront** was configured to serve content globally with HTTPS.
* **Terraform** was used to define, provision, and manage all infrastructure.
* **IAM Policies** were applied to control public access securely.

**How It Works**

The index.html file was uploaded to an S3 bucket configured for static website hosting. A CloudFront distribution was then attached to the bucket to ensure content is served over HTTPS with minimal latency. Terraform scripts defined all AWS resources, ensuring the deployment is reproducible and maintainable.

**Reflection and Learnings**

**Challenges Faced**

The original plan was to deploy a custom PHP API using Lambda and Docker. However, due to runtime compatibility and bootstrap execution errors, the approach was revised to Task 1. This shift allowed deeper exploration of Terraform’s strengths and AWS S3/CloudFront integrations.

**What I Learned**

* How to use Terraform modules like aws\_s3\_bucket and aws\_cloudfront\_distribution.
* How to apply IAM policies for public-read access and OAC integration with CloudFront.
* How AWS global infrastructure improves performance and security for even simple websites.
* The importance of troubleshooting logs and adapting when serverless solutions fail.

**Improvements & Future Work**

* Add a custom domain using Route 53 and SSL certificate via ACM.
* Connect a CI/CD pipeline (e.g., GitHub Actions) for automated deploys.
* Add versioning, logging, and backup for the bucket.

**Conclusion**

This project fulfilled Task 1 of the DLBSEPCP01\_E portfolio. It successfully used Terraform and AWS to build a highly available, globally accessible website that demonstrates real-world cloud deployment techniques.