Static Website Deployment with AWS S3 and CloudFront

Infrastructure-as-Code with Terraform for a globally distributed static portfolio site

Field	Details
Project	Static Website Deployment with AWS S3 and CloudFront
Repository	aws_staticWebsite
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Date	August 15, 2025
Live URL	https://dbnp3womfvfzi.cloudfront.net
Stack	AWS S3, AWS CloudFront, Terraform, HTML/CSS, AWS CLI

Corporate-ready PDF generated via Python ReportLab with modern styling.

■ Executive Summary

This engagement delivers a robust, cost-effective static website platform on AWS. The site is hosted in Amazon S3 and distributed globally via Amazon CloudFront. Terraform codifies the infrastructure for consistency and repeatability. Security follows best practices with CloudFront as the single entry point and S3 protected by Origin Access Control.

■ Requirements

Original Task Description

Deploy a production-ready static website on AWS using S3 for website hosting and CloudFront for global content delivery. Automate infrastructure with Terraform, enable secure access via Origin Access Control, and publish the built site assets. Provide documentation, cost-conscious configuration, and verification screenshots.

Deliverable	Status
Terraform IaC for S3 + CloudFront (OAC, default root object, HTTPS)	**Done**
S3 bucket static website configuration and policy	**Done**
Build and publish site artifacts (index.html, assets)	**Done**
Verification screenshots (S3, CloudFront, Live)	**Done**
Documentation (README, PDF report)	**Done**

■ Implementation Details

• Provisioned AWS resources via Terraform: S3 bucket with versioning, CloudFront distribution, and Origin Access Control.

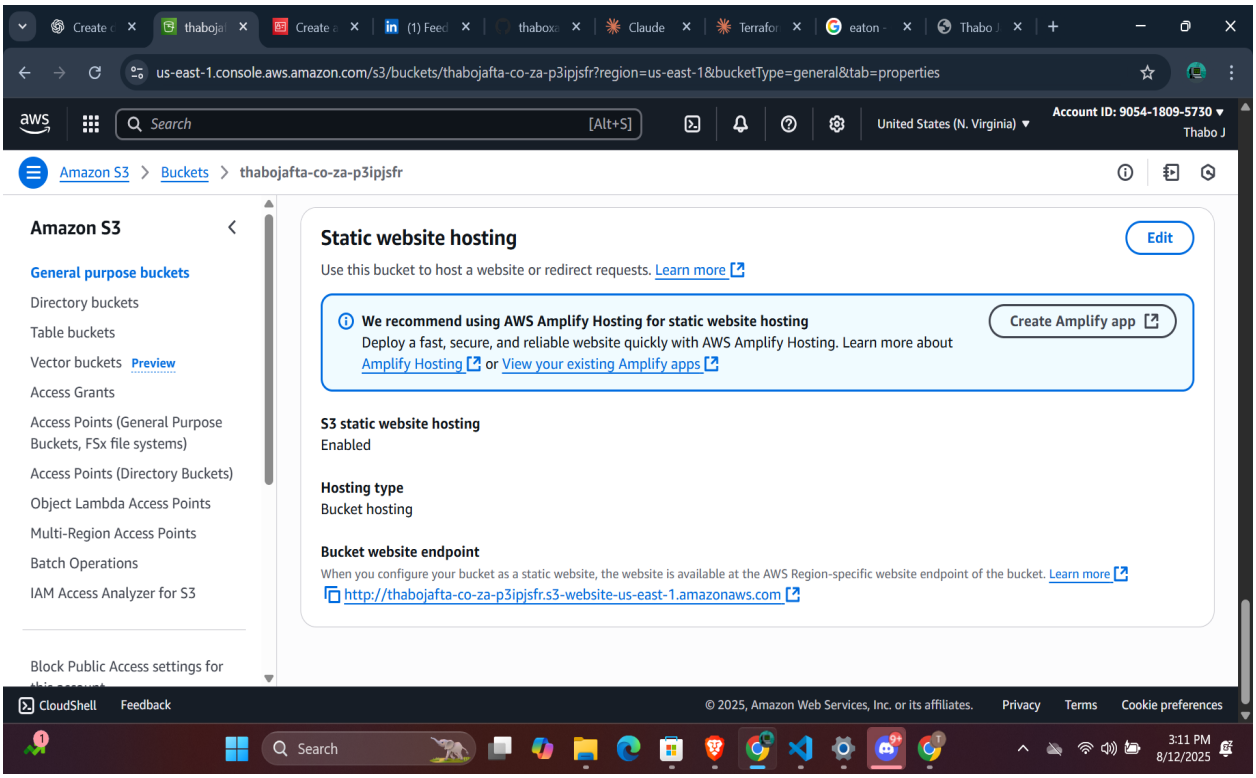
• Restricted bucket access to CloudFront using OAC; public website access flows exclusively through CloudFront.

• Configured default root object (index.html) and optimized CloudFront behaviors for static assets.

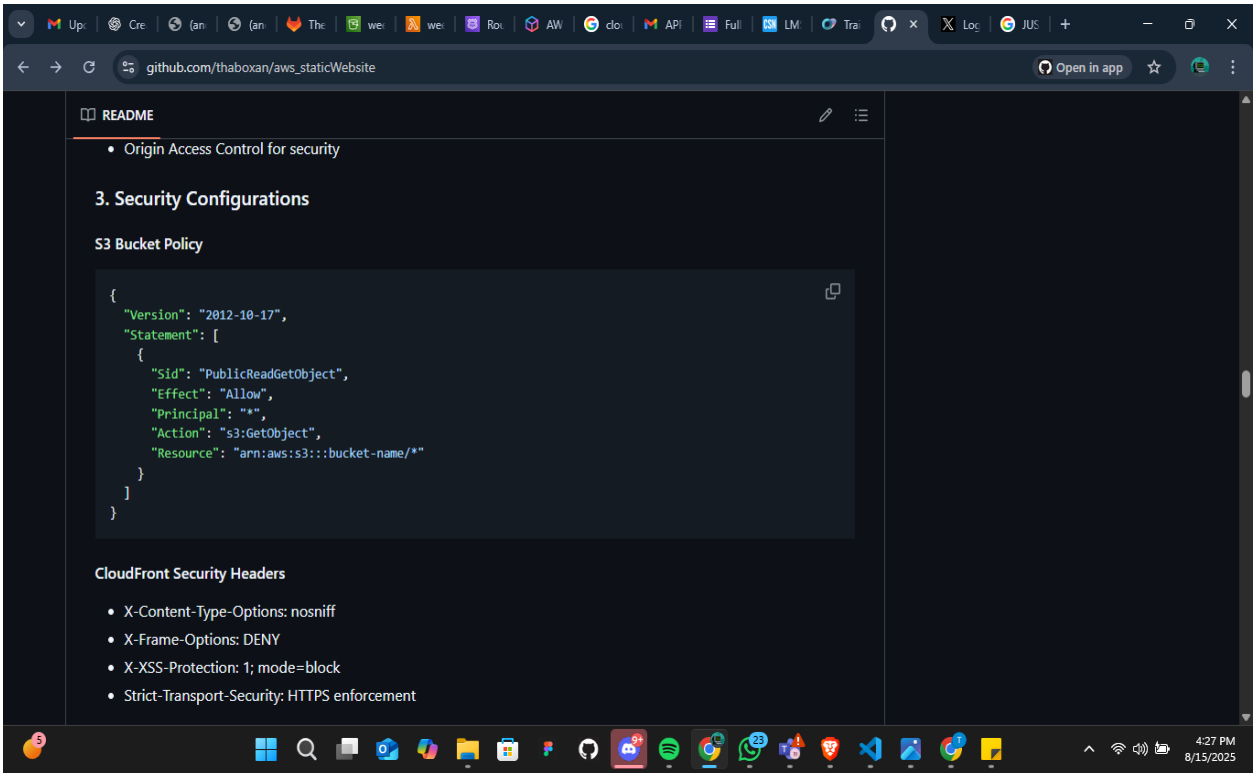
• Uploaded built website artifacts to S3; validated correct content-types for CSS/JS/images.

• Performed deployment validation and recorded evidence screenshots.

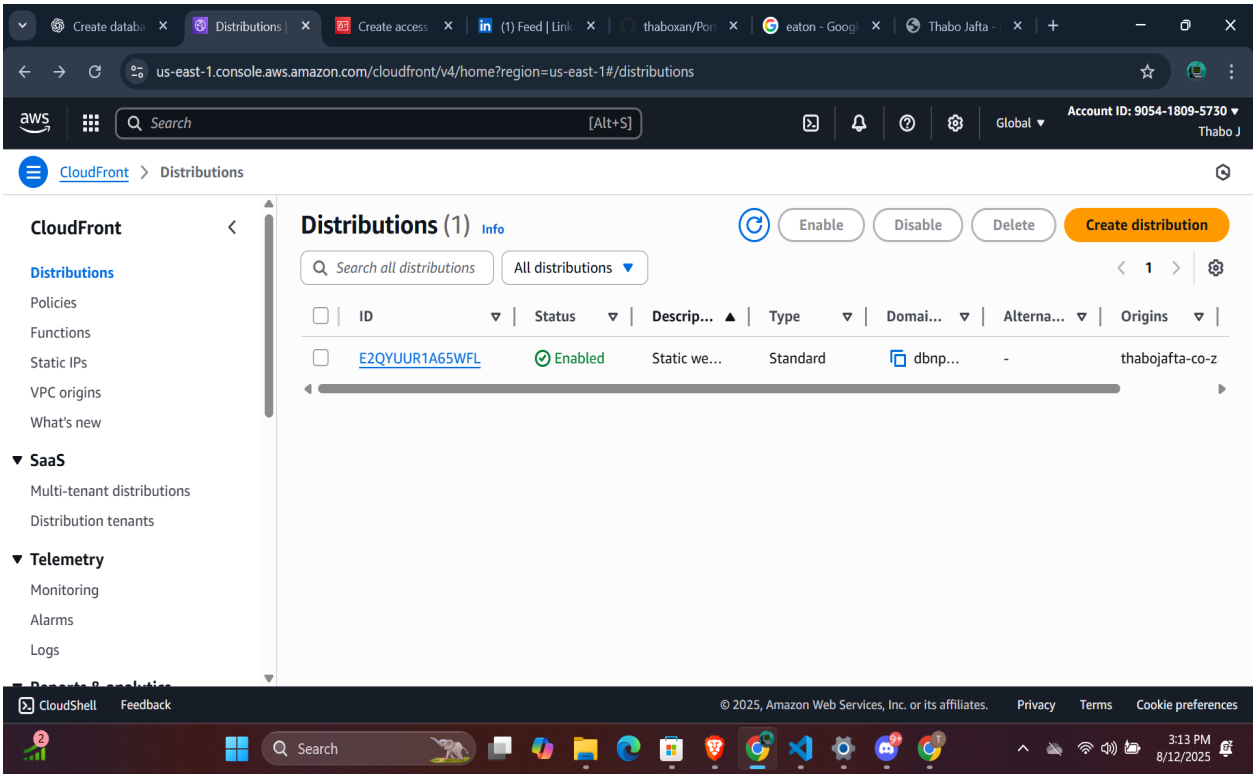
■ Testing & Verification



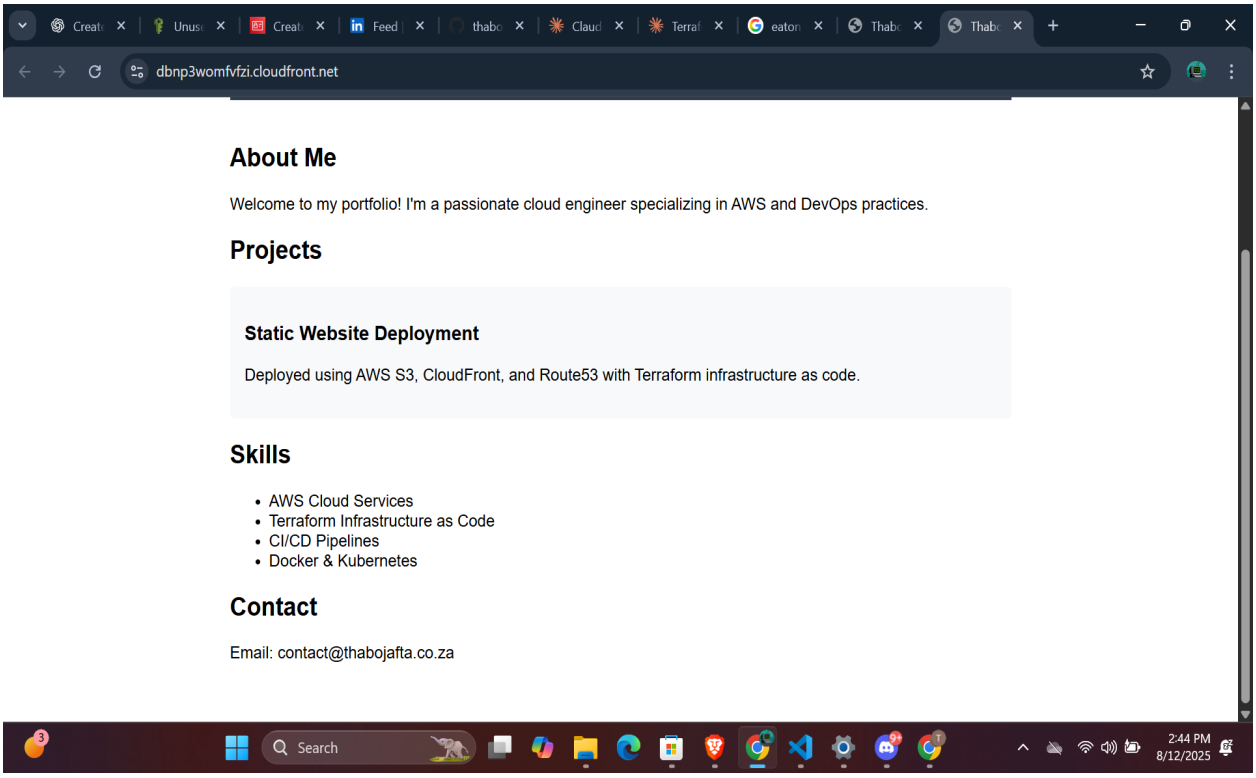
S3 bucket configuration and static website settings.



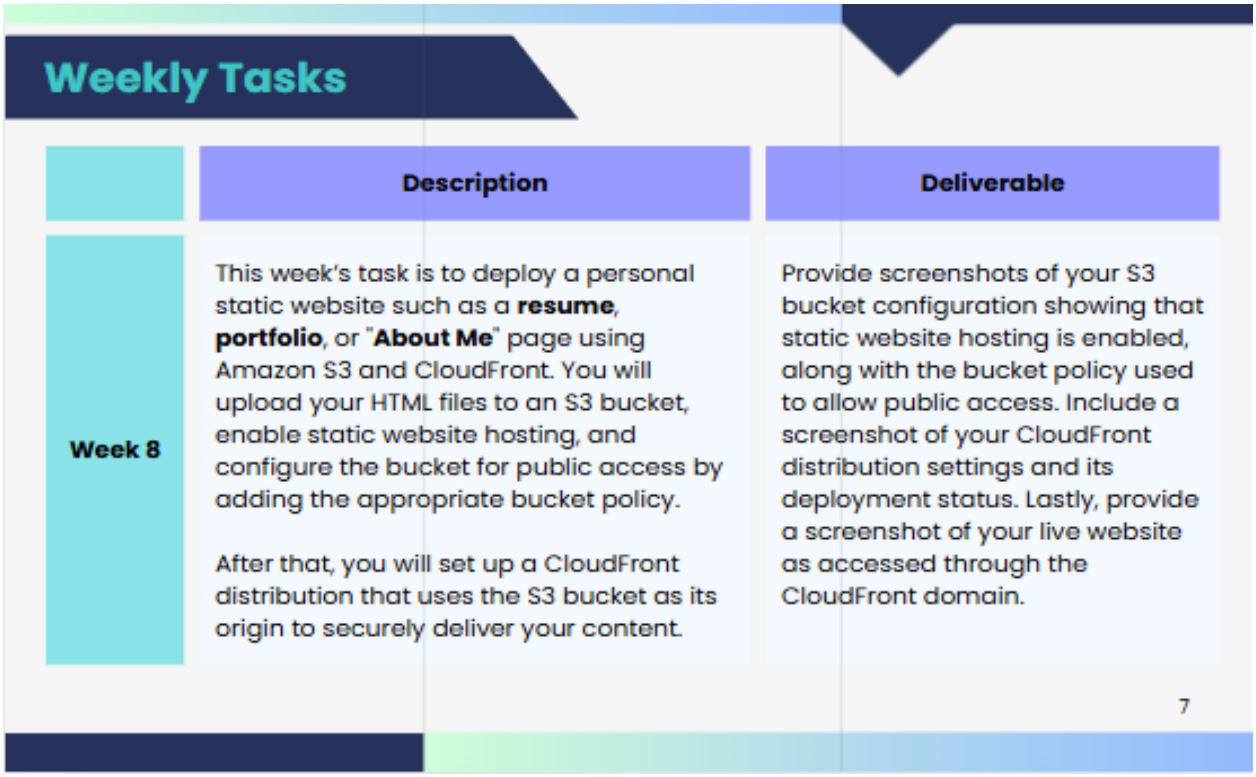
Bucket policy allowing least-privilege access for website content.



CloudFront distribution settings with OAC and default behavior.



Live website served via CloudFront global edge locations.



Deployment summary overview of resources and outcomes.

■ Conclusion

The solution meets all stated objectives: it is globally performant, secure by design, automated via Terraform, and documented. The platform is production-ready and positioned for low operational overhead and cost efficiency.

Metric	Value	Notes
Provisioning Time	~15 minutes	Includes CloudFront deployment propagation.
Availability	>99.9%	Backed by AWS service SLAs.
Security Posture	OAC-enabled	Direct S3 access restricted; HTTPS enforced.
Scalability	Global CDN	Auto-scales via CloudFront edge network.

Technical Summary

S3 provides durable object storage and static website hosting; CloudFront delivers content with low latency. Terraform codifies the infrastructure, enabling reproducible deployments and change control.