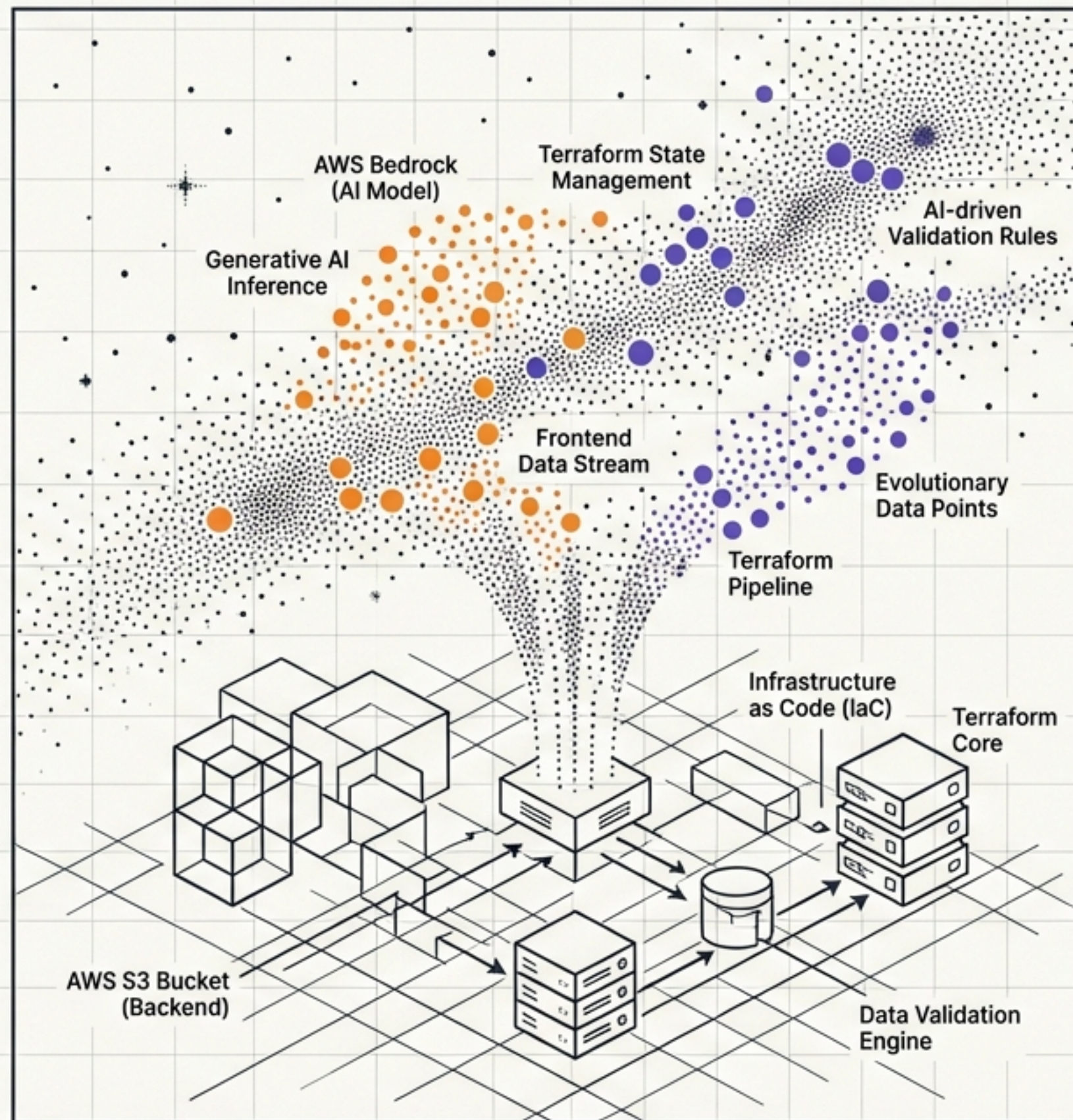


Terraform AI Validator

>_ AWS Bedrock S3 Data Validator
with an S3 Frontend

Architecture & Deployment Baseline Overview

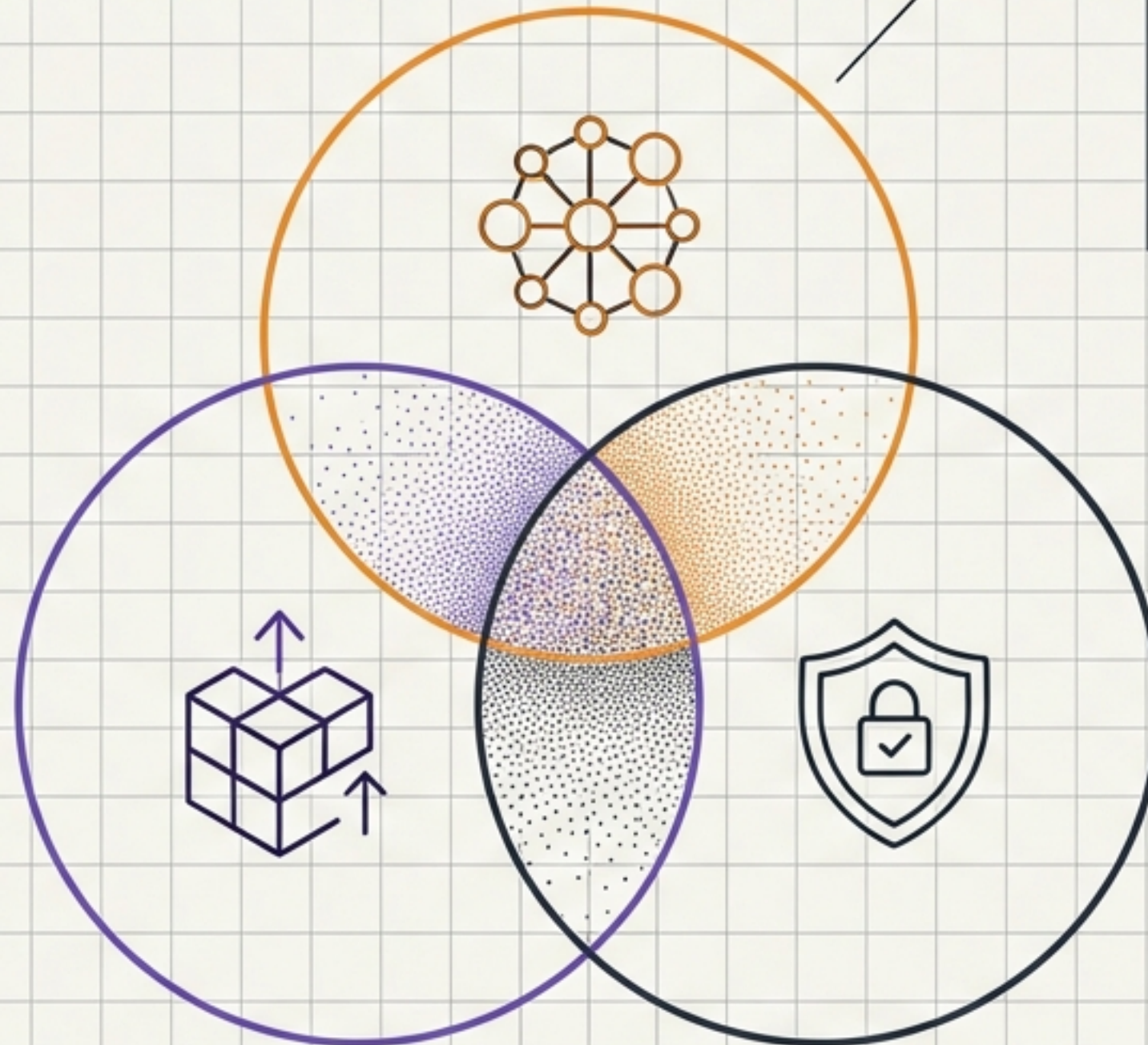


mattnicomn/Terraform_AI_Validator

Enterprise-Grade AI Deployments at Scale

The Baseline

A modular, reusable Terraform foundation designed to enforce standard folder hierarchies and isolate deployment environments (dev, prod).



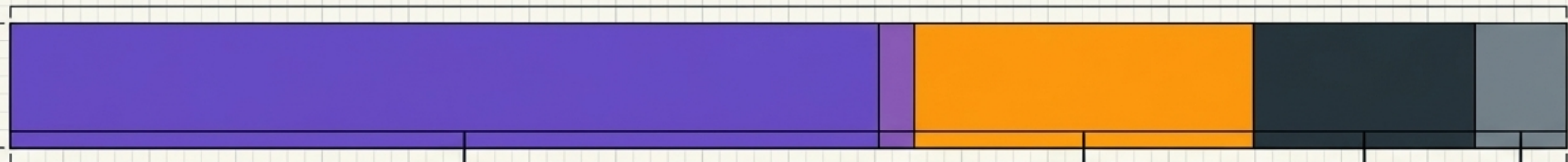
The Engine

Automated AWS Bedrock and S3 integrations executing backend data validation through Python logic.

The Interface

A fully themed, static S3 frontend deployed with CI/CD automation, built to satisfy both commercial polish and strict government documentation standards.

Functional Language Distribution



HTML (58.7%) & CSS (2.3%)

Inter, JetBrains Mono

The User Interface. S3-hosted static frontend files managing the global theme, contact pages, and documentation rendering.

HCL (19.6%)

Inter, JetBrains Mono

The Infrastructure Engine. Terraform configuration managing routing, storage, and IAM policies.

Python (13.7%)

Inter, JetBrains Mono

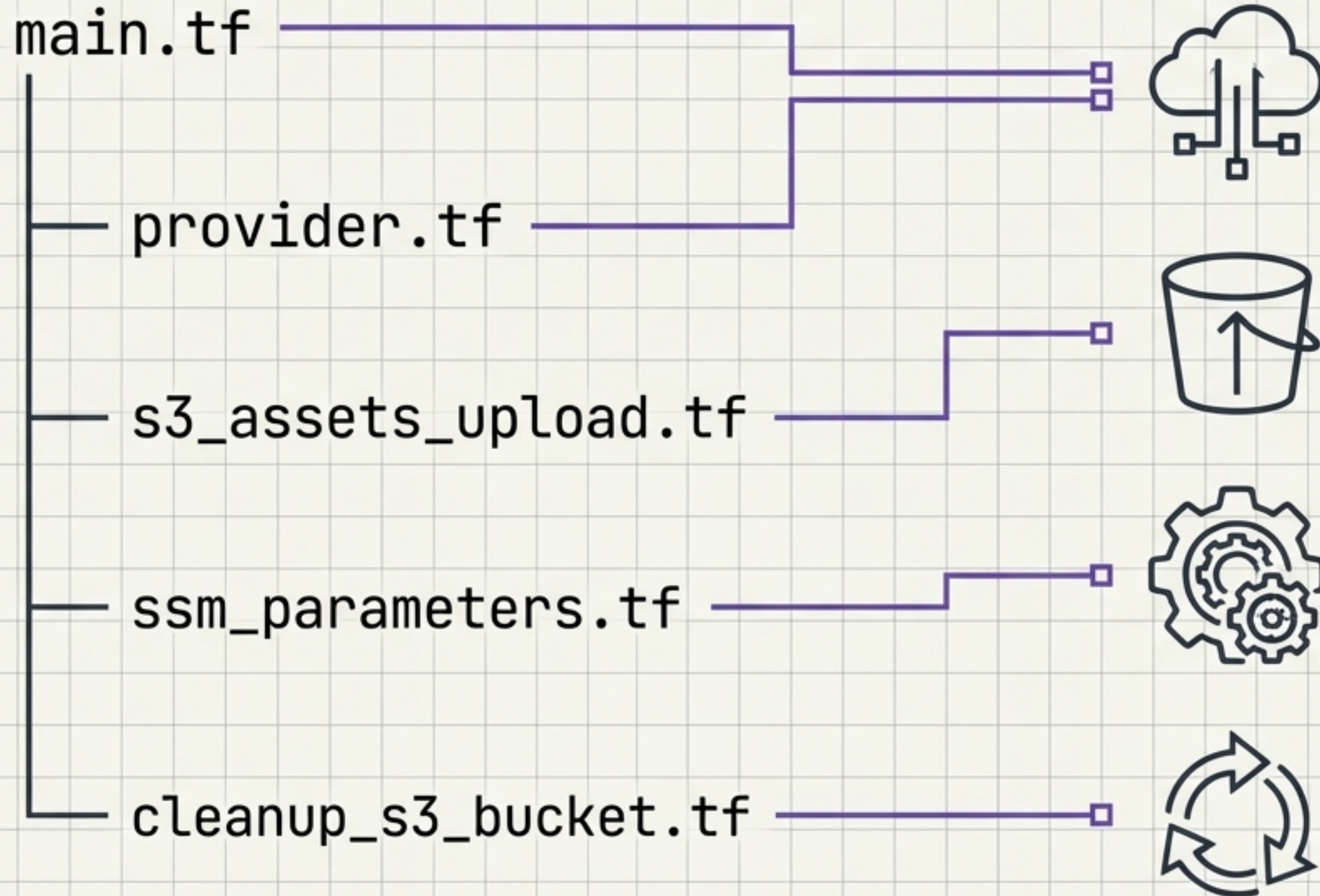
Backend Logic. Core execution scripts bridging S3 storage events with AWS Bedrock AI processing.

PowerShell (5.7%)

Inter, JetBrains Mono

Deployment Automation. Robust orchestration scripts executing complex multi-phase CI/CD tasks.

Modular Infrastructure as Code



AWS Environment Setup

The core foundation defining cloud provider constraints and overarching resource definitions.

Automated Frontend Hosting

Dynamically pushes the assets/ directory and HTML files directly to S3 upon execution.

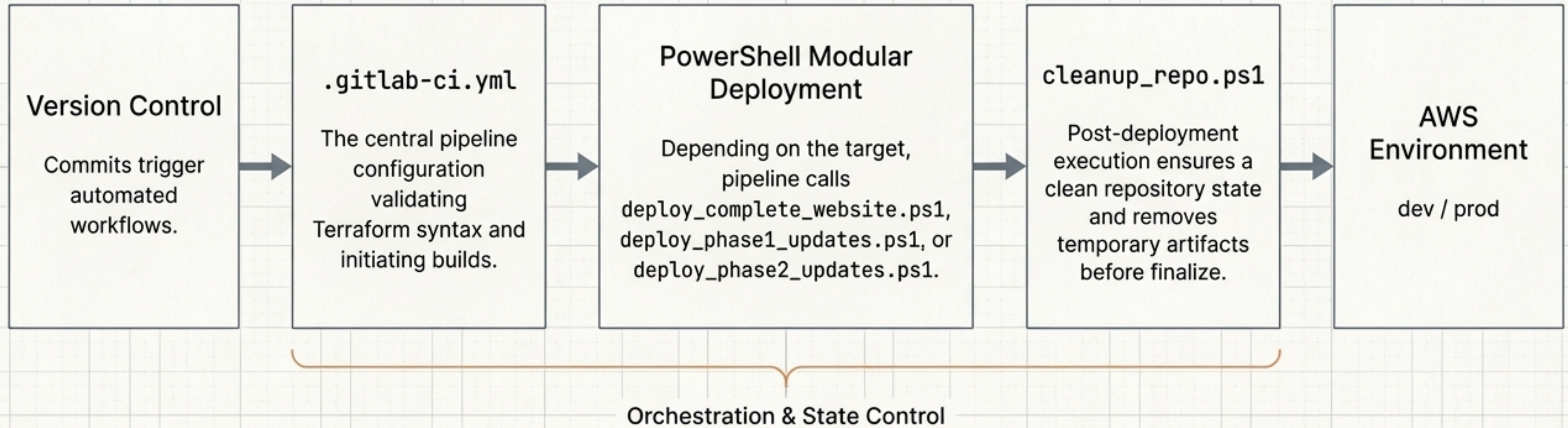
Secure Configuration

Centralized management of environment variables and secrets via AWS Systems Manager.

Lifecycle Management

Dedicated state control to cleanly tear down and manage storage state, preventing resource leaks.

Continuous Deployment Automation



Supporting Commercial and Federal Workloads

Commercial Demonstration

Script Target:

deploy_commercial_demo.ps1
JetBrains Mono

Frontend Focus:

Implements the new cosmos starry background and global CSS theming for visual polish.

Content:

Features the AWS Founders Program Profile (CO_FOUNDERS_PROFILE.md).

Government Baseline

Script Target:

PHASE2_DEPLOYMENT_SUMMARY.md tracking.
JetBrains Mono

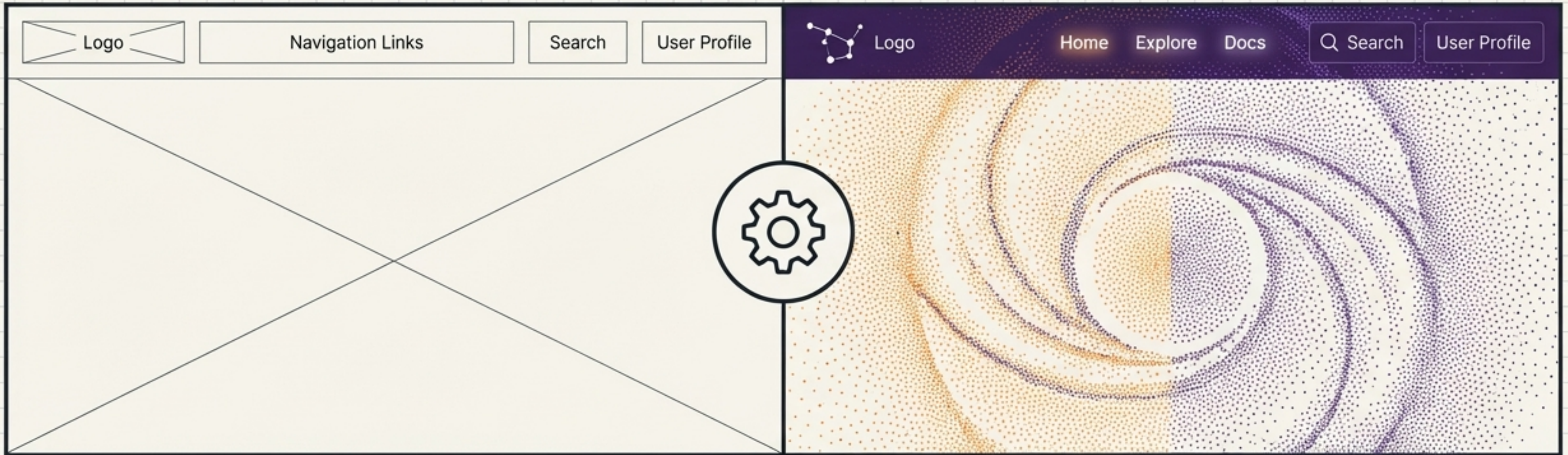
Frontend Focus:

Utilitarian layout prioritizing high-contrast accessibility and rigid documentation structures.

Content:

Integrates exhaustive government documentation pages, specifically tailored for FedRAMP and FISMA compliance.

Frontend UI and Thematic Evolution



Visual Polish

Recent commits actively transition the site from basic headers to a unified cosmos aesthetic, driven by updates tracked in `BACKGROUND_UPDATE_NOTE.md`.

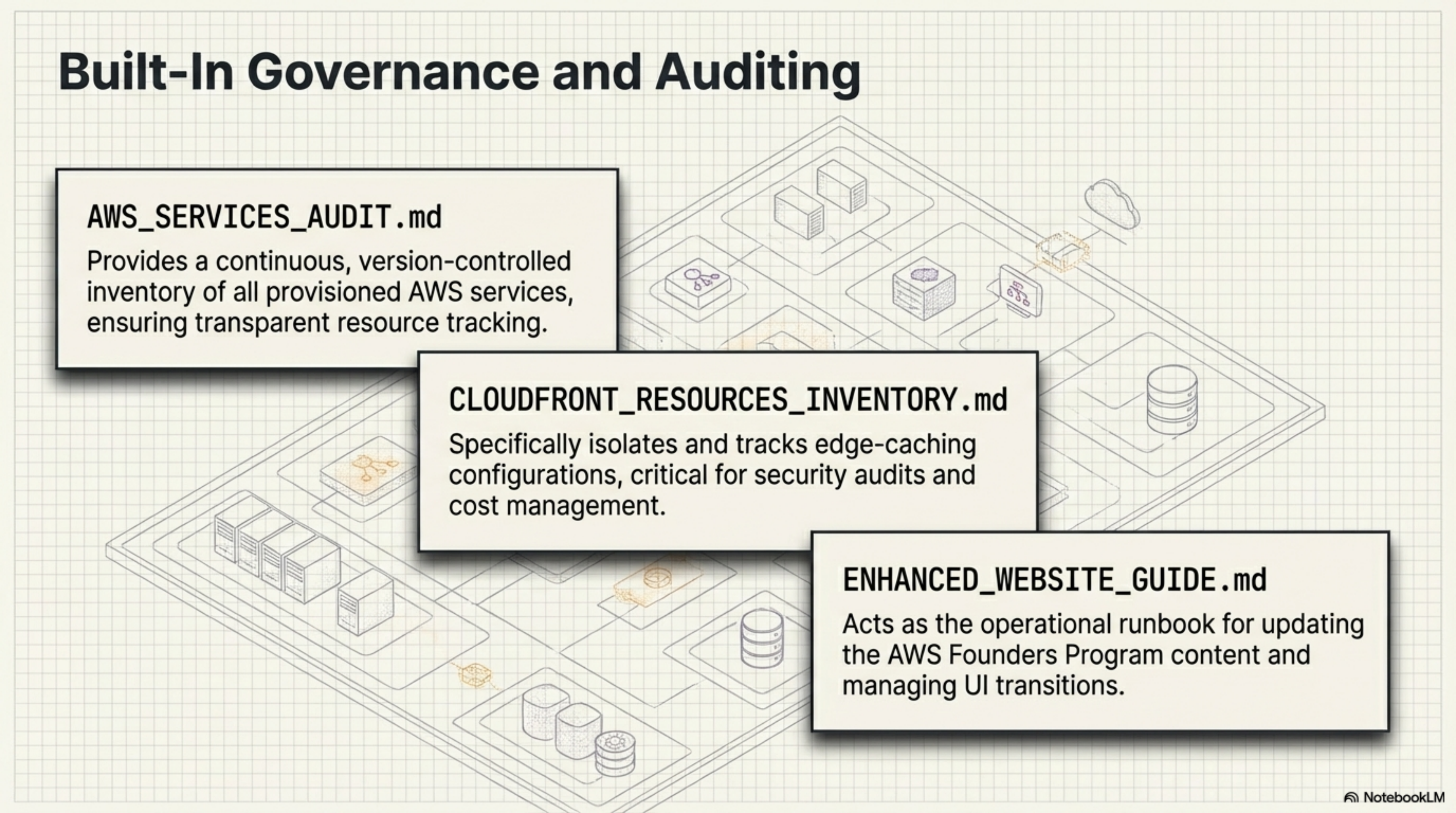
Global Theming

Implementation of a site-wide CSS architecture (`WEBSITE_OVERHAUL_PROGRESS.md`) to ensure consistency across all commercial and compliance pages.

Automated Asset Sync

The Terraform backend automatically synchronizes the newly added assets/directory directly to the S3 hosting buckets without manual intervention.

Built-In Governance and Auditing



AWS_SERVICES_AUDIT.md

Provides a continuous, version-controlled inventory of all provisioned AWS services, ensuring transparent resource tracking.

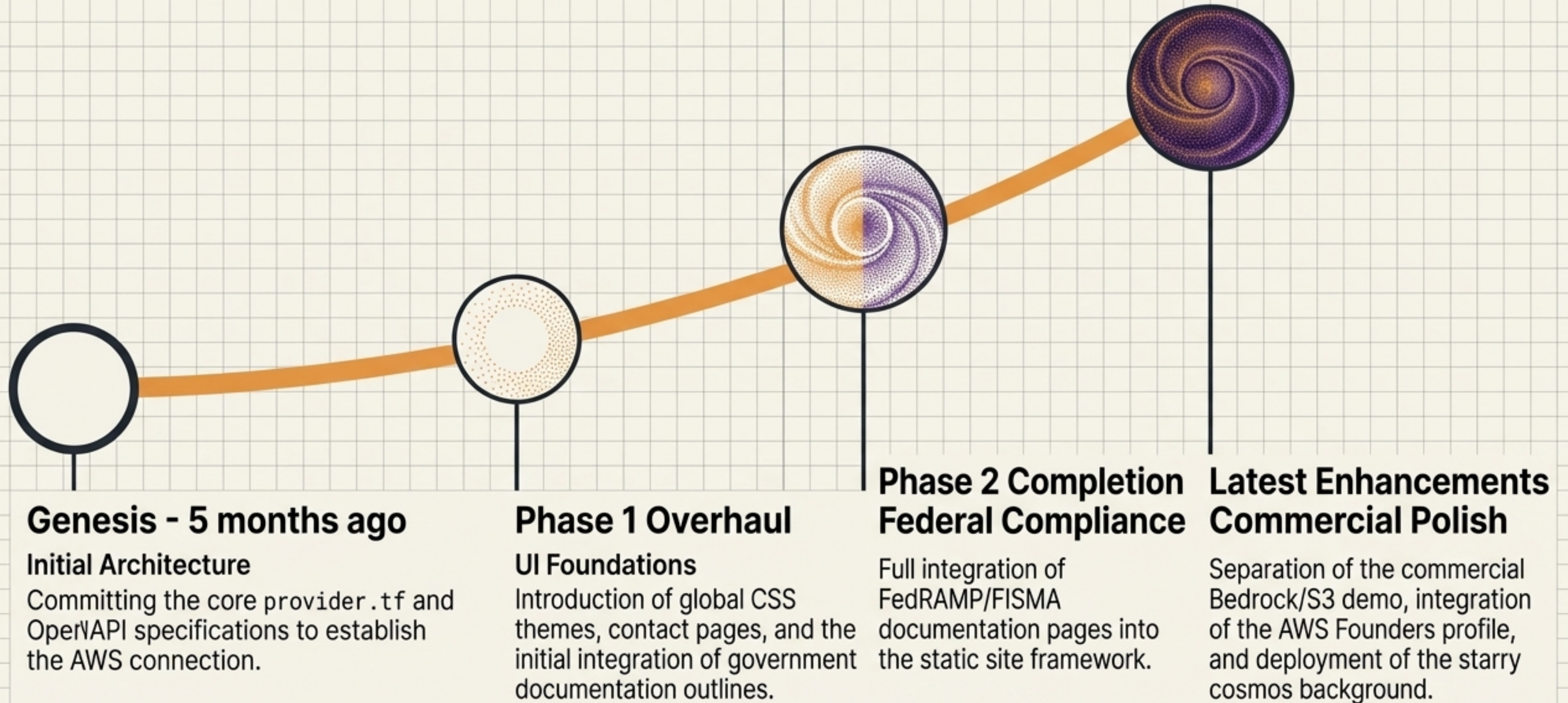
CLOUDFRONT_RESOURCES_INVENTORY.md

Specifically isolates and tracks edge-caching configurations, critical for security audits and cost management.

ENHANCED_WEBSITE_GUIDE.md

Acts as the operational runbook for updating the AWS Founders Program content and managing UI transitions.

Evolution of the Validation Baseline



The Closed-Loop Ecosystem

User Interaction

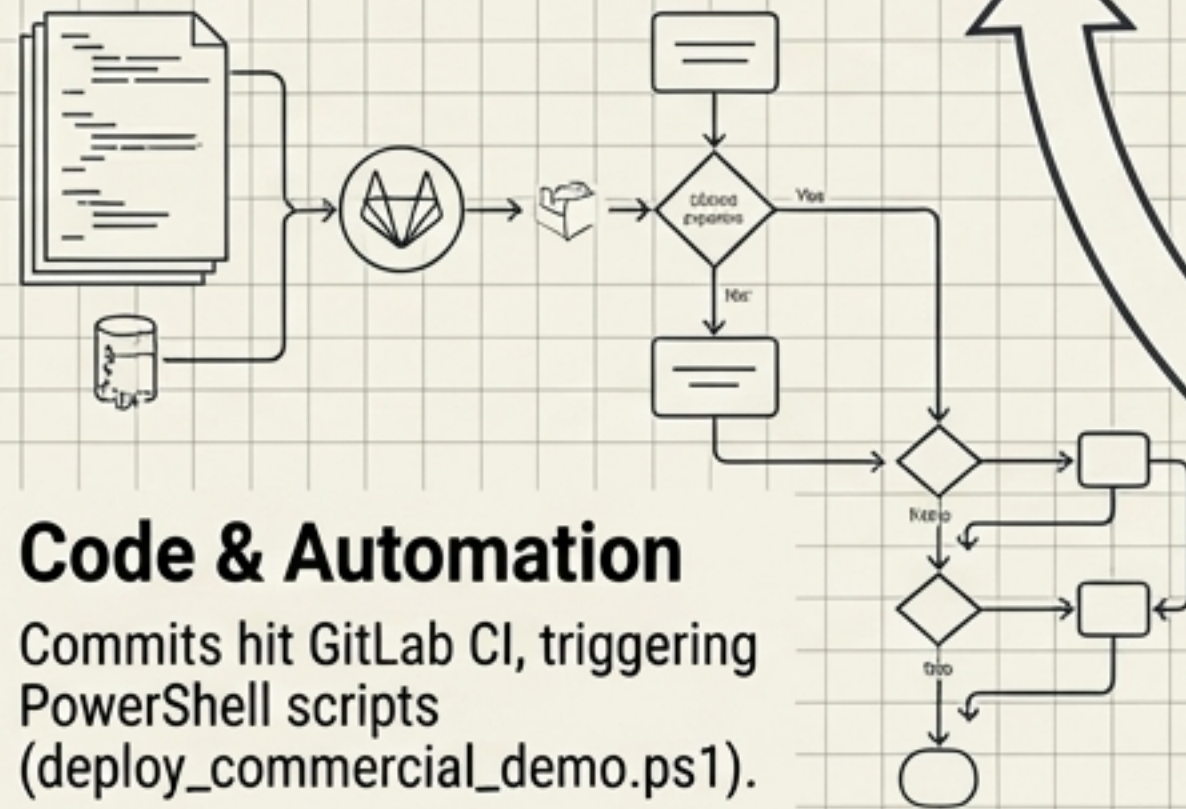
Accessing the styled HTML/CSS frontend hosted on S3 and delivered via CloudFront.

AI Engine

Python backend scripts validate S3 data streams against AWS Bedrock generative AI models.

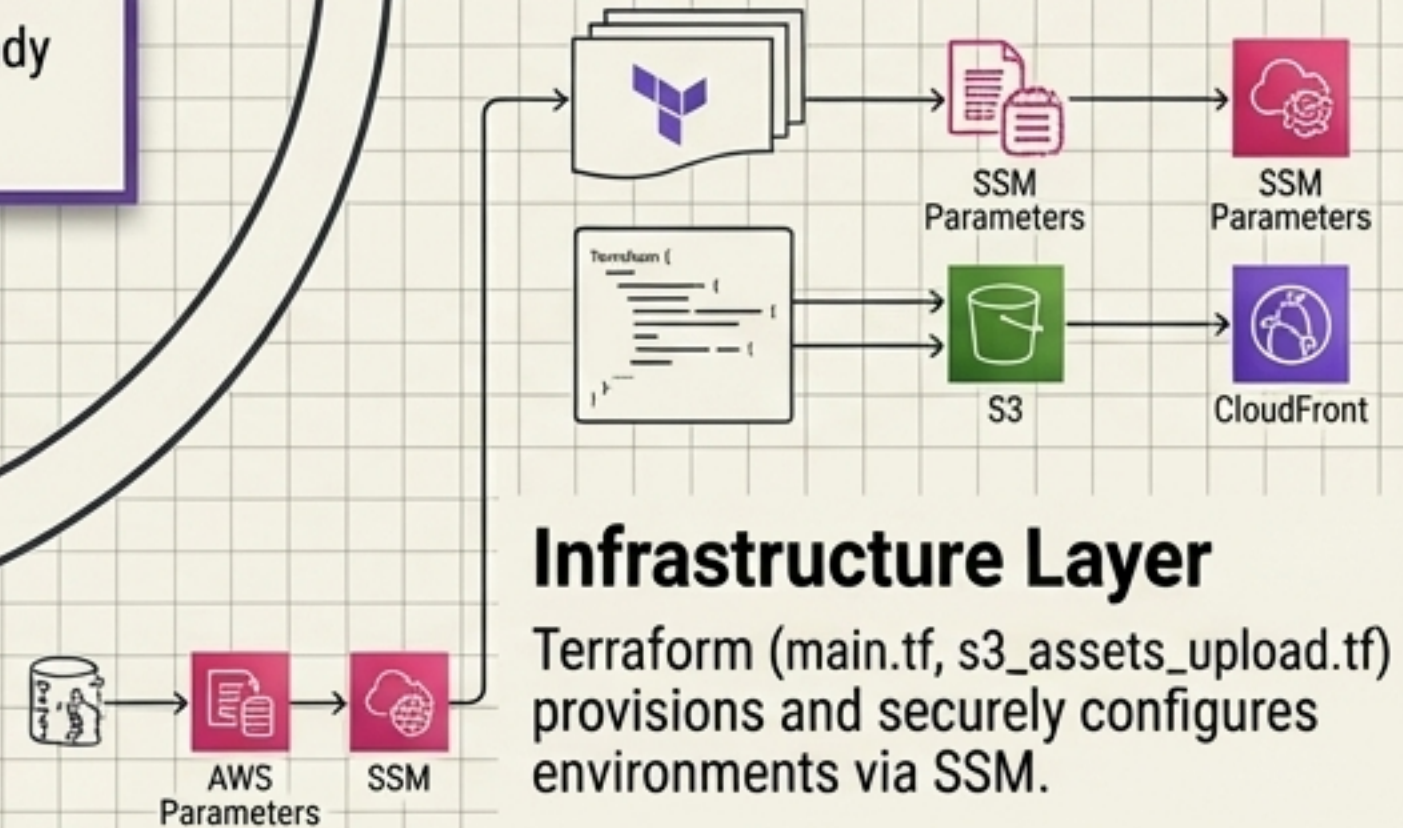
The Blueprint Reality

A fully automated, version-controlled system where a single commit instantly triggers compliant, themed, and AI-ready infrastructure updates.



Code & Automation

Commits hit GitLab CI, triggering PowerShell scripts (deploy_commercial_demo.ps1).



Infrastructure Layer

Terraform (main.tf, s3_assets_upload.tf) provisions and securely configures environments via SSM.