📄 Specification Sheet

Solution Name: InfraSync – DriftGuard for AWS
Partner: Before You Solutions
Solution Type: Cloud Governance & Automation
Category: Infrastructure as Code (IaC) / AWS DevOps Automation

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🎯 Purpose

InfraSync – DriftGuard for AWS is a fully automated governance framework that detects and remediates configuration drift across Terraform-managed AWS resources. It ensures continuous alignment between declared infrastructure state and the actual AWS environment, improving compliance, stability, and cost control.

⚙️ Architecture Overview

Workflow:

1. **AWS EventBridge** captures resource configuration changes in real time.
2. **AWS Lambda** executes drift detection logic using Boto3 and Terraform Cloud API.
3. **Terraform Cloud API** validates resource state against Terraform state files.
4. **DynamoDB** logs detected drifts, remediation status, and timestamps.
5. **Slack Notifications** inform teams with drift summaries and cost impact.
6. Optional **Auto-Remediation** applies Terraform plans to restore desired state.

AWS Services Used:

- **EventBridge:** Resource-change event triggers
- **Lambda:** Core drift detection logic (Python 3.11)
- **DynamoDB:** Drift history and audit logging
- **CloudWatch:** Monitoring and metrics
- **IAM:** Least-privilege role enforcement
- **Secrets Manager:** Secure storage of Terraform API token and webhook URLs

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□ Tech Stack

Layer	Technology
Backend	AWS Lambda (Python 3.11), Boto3, Terraform Cloud API
IaC	Terraform v1.13.5
Notifications	Slack Webhooks
Database	DynamoDB (with TTL)
CI/CD	GitHub Actions
Frontend (optional)	React + Tailwind (for drift dashboard)

📊 Key Features

- Real-time drift detection for EC2, S3, IAM, and RDS resources
- Slack alerts with change type, timestamp, and affected resource
- Historical drift tracking in DynamoDB
- Optional auto-remediation via Terraform Cloud API
- Least-privilege IAM roles and encrypted secrets
- EventBridge scheduling for daily or event-based scans

💰 Cost Estimate

Service	Estimated Monthly Cost
AWS Lambda	$0.20
DynamoDB	$0.10
CloudWatch	$0.50
Total	**~$1 per month**

Potential Value: Saves 10–30% in cloud waste and reduces manual rework time by up to 80%.

📦 Deployment

- Deploy via Terraform (main.tf, lambda.tf, eventbridge.tf).

- Configure .env with Terraform org, workspace, and webhook URL.
- Run terraform apply to provision all resources.