

# Go EC2 Drift Detection Tool

This Go application retrieves an EC2 instance ID from a `terraform.tfstate` file and uses the AWS SDK (v2) to describe the instance on AWS. It serves as a foundational step toward detecting configuration drift between Terraform and actual AWS infrastructure.

## Features

- Parses Terraform state (`terraform.tfstate`) as JSON
- Extracts the provisioned EC2 instance ID
- Uses AWS SDK for Go v2 to query AWS and retrieve the instance's current configuration
- Prints out basic details (e.g., instance type and security groups)
- Ready to extend for full drift detection

## Prerequisites

1. **Go installed** (Go 1.19+ recommended)
2. **Terraform applied** to generate a valid `terraform.tfstate` containing an EC2 instance
3. **AWS credentials configured**, either via:
  - Environment variables
  - `~/.aws/credentials` file
  - IAM role

## Installation

Clone or copy the project files, then install the dependencies: `go mod init driftreport`

## AWS Credential Configuration

You can provide AWS credentials via environment variables:

```
export AWS_ACCESS_KEY_ID="your-access-key"
export AWS_SECRET_ACCESS_KEY="your-secret-key"
export AWS_REGION="us-east-1"
```

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## Run the application

Run the application with `go run cmd/main.go`

## Future Improvements

- Compare more attributes for drift detection (tags, volumes, SGs, etc.)
- Parse HCL configuration files (.tf)
- Output drift results in structured formats (CSV, table, etc.)
- CLI flags to control drift detection behavior