

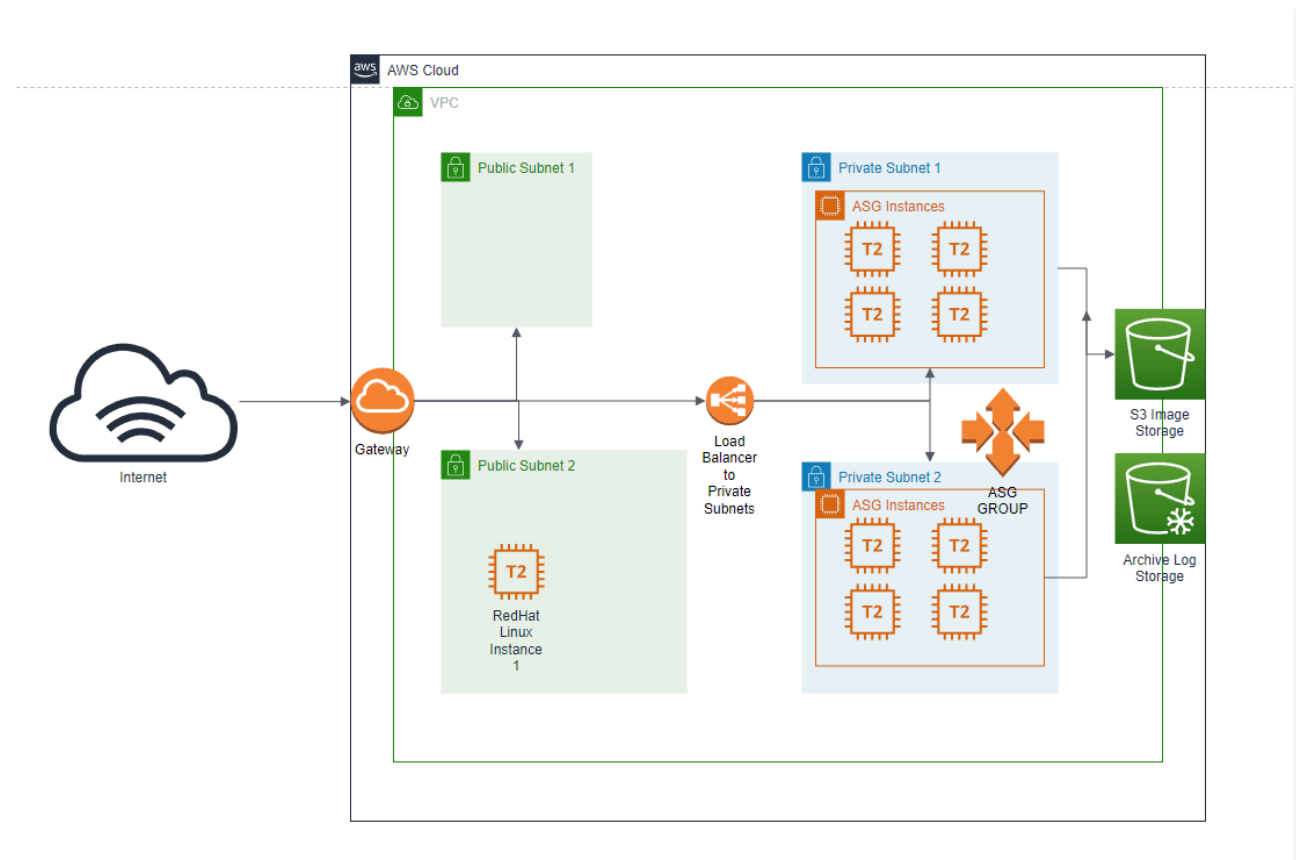
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## Overview

This documentation provides an overview of the AWS infrastructure managed by Terraform configurations in the **Martino-CF** repository.

### Coalfire AWS Config

The accompanying terraform configuration will create the network configuration and resources shown below.



## 1. Architecture Overview

The AWS architecture consists of:

- Virtual Private Cloud (VPC) for network isolation.
- 2 Public and 2 private subnets for resource segregation.
- An ASG Group for Red Hat Linux instances
- S3 buckets for object storage.
- Elastic Load Balancer for traffic management between private subnets
- Security groups, IAM roles, and policies for security management.

## 2. Infrastructure Components

- Networking (VPC, Subnets)
  - a. The infrastructure utilizes a VPC with public and private subnets across multiple Availability Zones (AZs) for high availability and fault tolerance.
- Compute (EC2 Instances, Auto Scaling)
  - a. EC2 instances are provisioned within private subnets, managed by Auto Scaling Groups (ASGs) for scalability and resilience.

```
PS C:\Users\Matt\Downloads> ssh -i "rhlinux.pem" ec2-user@ec2-54-227-140-74.compute-1.amazonaws.com
The authenticity of host 'ec2-54-227-140-74.compute-1.amazonaws.com (54.227.140.74)' can't be established.
ECDSA key fingerprint is SHA256:eoF70eQ3/5wHf79B/xj+/HqXxMSBYUL26mVPerpDXuk.
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added 'ec2-54-227-140-74.compute-1.amazonaws.com,54.227.140.74' (ECDSA) to the list of known hosts.
Register this system with Red Hat Insights: insights-client --register
Create an account or view all your systems at https://red.ht/insights-dashboard
[ec2-user@ip-172-31-222-172 ~]$
```

- Storage (S3 Buckets)
  - a. S3 buckets are utilized for storing static assets, backups, or other data required by the application.
- Security (Security Groups, IAM Roles)
  - a. Security Groups are used to control inbound and outbound traffic to EC2 instances and other resources. IAM roles and policies manage permissions for services and users interacting with AWS resources.

## 3. Module Structure

We use modules in terraform to organize related resources into reusable components. Modules enhance deployment reliability and efficiency when managing cloud infrastructure in Terraform.

Root Module (martino\_cf/)

├─ main.tf

├─ variables.tf

├─ outputs.tf

├─ networking/

│ └─ main.tf

│ └─ variables.tf

│ └─ outputs.tf

└─ security\_groups/

```
├── main.tf
├── variables.tf
├── outputs.tf
├── compute/
│   ├── main.tf
│   ├── variables.tf
│   └── outputs.tf
├── load_balancer/
│   ├── main.tf
│   ├── variables.tf
│   └── outputs.tf
├── storage/
│   ├── main.tf
│   ├── variables.tf
│   └── outputs.tf
├── security_groups/
│   ├── security_groups.tf
│   ├── variables.tf
│   └── outputs.tf
```

## Resources:

<https://github.com/orgs/Coalfire-CF/repositories?type=public&q=terraform-aws>

[https://registry.terraform.io/providers/hashicorp/aws/latest/docs/resources/security\\_group](https://registry.terraform.io/providers/hashicorp/aws/latest/docs/resources/security_group)

<https://registry.terraform.io/providers/hashicorp/aws/latest/docs/resources/vpc>

<https://registry.terraform.io/providers/hashicorp/aws/latest/docs/resources/ami>

<https://registry.terraform.io/providers/hashicorp/aws/latest/docs/resources/lb>

[https://registry.terraform.io/providers/hashicorp/aws/latest/docs/resources/lb\\_listener](https://registry.terraform.io/providers/hashicorp/aws/latest/docs/resources/lb_listener)

[https://registry.terraform.io/providers/hashicorp/aws/latest/docs/resources/s3\\_bucket](https://registry.terraform.io/providers/hashicorp/aws/latest/docs/resources/s3_bucket)

[https://registry.terraform.io/providers/hashicorp/aws/latest/docs/data-sources/autoscaling\\_group](https://registry.terraform.io/providers/hashicorp/aws/latest/docs/data-sources/autoscaling_group)