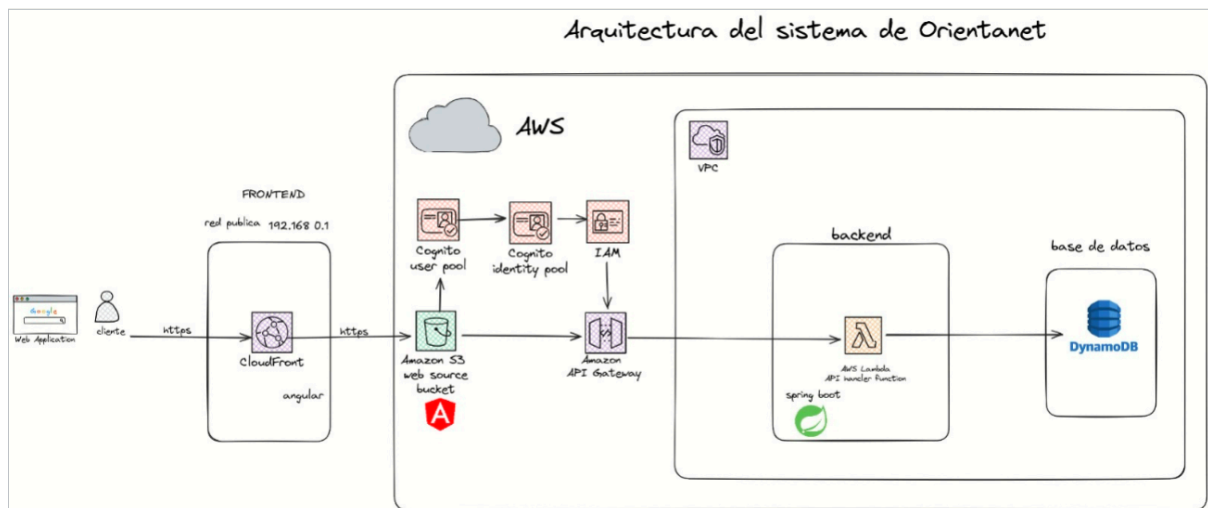


proyecto final terraform

Enlace del cloudfront:

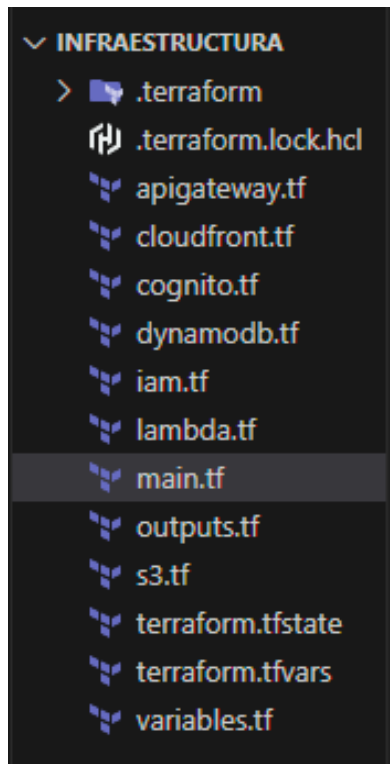
d1wzfonks6zwa8.cloudfront.net

Diagrama del proyecto:



Toda la implementación de configuración para la automatización de despliegue con terraform de la infraestructura de orientanet

Estructura de la arquitectura en terraform:



Implementación del main.tf

```
main.tf X
main.tf > ...
1 provider "aws" {
2   region = var.aws_region
3 }
4
5
```

Implementación de variables.tf

```
variables.tf X
variables.tf > variable "cognito_pool_name" > type
1 # variables.tf
2
3 variable "aws_region" {
4   description = "La región de AWS donde se desplegarán los recursos"
5   type        = string
6   default     = "us-east-2"
7 }
8
9 variable "s3_bucket_name" {
10  description = "El nombre del bucket de S3"
11  type        = string
12  default     = "web-source-bucket"
13 }
14
15 variable "cognito_pool_name" {
16  description = "Nombre del pool de usuarios de Cognito"
17  type        = string
18  default     = "leocorp"
19 }
20
21 variable "api_gateway_name" {
22  description = "Nombre de la API Gateway"
23  type        = string
24  default     = "api-gateway-orientanet"
25 }
26
27 variable "dynamodb_table_name" {
28  description = "Nombre de la tabla DynamoDB"
29  type        = string
30  default     = "orientanet-table"
31 }
32
```

junto con variables de entorno

```
terraform.tfvars ×
terraform.tfvars > ...
1  # terraform.tfvars
2
3  aws_region      = "us-east-2"
4  s3_bucket_name  = "web-source-bucket-orientanet"
5  cognito_pool_name = "orientanet-user-pool"
6  api_gateway_name = "orientanet-api"
7  dynamodb_table_name = "orientanet-table"
8  |
```

implementación de outputs.tf

```
outputs.tf ×
outputs.tf > output "s3_bucket_name" > description
1  # outputs.tf
2
3  output "s3_bucket_name" {
4      description = "Nombre del bucket S3"
5      value       = aws_s3_bucket.web_bucket.bucket
6  }
7
8  output "cloudfront_domain" {
9      description = "Dominio de CloudFront"
10     value       = aws_cloudfront_distribution.cdn.domain_name
11 }
12
13 output "cognito_user_pool_id" {
14     description = "ID del pool de usuarios de Cognito"
15     value       = aws_cognito_user_pool.user_pool.id
16 }
17
18 output "dynamodb_table_name" {
19     description = "Nombre de la tabla DynamoDB"
20     value       = aws_dynamodb_table.orientanet_table.name
21 }
```

implementación de s3.tf

```
s3.tf x
s3.tf > resource "aws_s3_bucket_public_access_block" "block" > block_public_acls

19
20 resource "aws_s3_bucket_policy" "public_read" {
21   bucket = aws_s3_bucket.web_bucket.id
22
23   policy = jsonencode({
24     Version = "2012-10-17",
25     Statement = [
26       {
27         Sid      = "PublicReadGetObject",
28         Effect   = "Allow",
29         Principal = "*",
30         Action   = ["s3:GetObject"],
31         Resource = "${aws_s3_bucket.web_bucket.arn}/*"
32       }
33     ]
34   })
35 }
36
```

implementación de una instancia para la configuración del backend en lambda (aun no subido el jar) solo es una instancia de la configuración

```
lambda.tf x
lambda.tf > resource "null_resource" "lambda_function"

1 # lambda.tf
2
3 resource "null_resource" "lambda_function" {
4   provisioner "local-exec" {
5     command = "echo 'Lambda function not yet created'"
6   }
7 }
```

implementación del iam.tf

```
iam.tf X
iam.tf > resource "aws_iam_role" "lambda_execution_role" > assume_role_policy
1  # iam.tf
2
3  resource "aws_iam_role" "lambda_execution_role" {
4      name = "lambda_execution_role"
5
6      assume_role_policy = jsonencode({
7          Version = "2012-10-17"
8          Statement = [
9              {
10                 Action    = "sts:AssumeRole"
11                 Effect    = "Allow"
12                 Principal = {
13                     Service = "lambda.amazonaws.com"
14                 }
15             }
16         ]
17     })
18 }
19
```

implementación de la configuración de la base de datos

```
dynamodb.tf X
dynamodb.tf > ...
1  # dynamodb.tf
2
3  resource "aws_dynamodb_table" "orientanet_table" {
4      name           = var.dynamodb_table_name
5      billing_mode   = "PAY_PER_REQUEST"
6      hash_key       = "id"
7      attribute {
8          name = "id"
9          type = "S"
10     }
11
12     tags = {
13         Name = "OrientanetTable"
14     }
15 }
16
```

implementación del cognito.tf

```

cognito.tf x
cognito.tf > ...
3 resource "aws_cognito_user_pool" "user_pool" {
4   name = var.cognito_pool_name
5
6   password_policy {
7     minimum_length      = 8
8     require_uppercase   = true
9     require_lowercase   = true
10    require_numbers     = true
11    require_symbols     = false
12  }
13
14  auto_verified_attributes = ["email"]
15  alias_attributes         = ["email"]
16 }
17

```

Implementación de cloudfront.tf

```

cloudfront.tf x
cloudfront.tf > resource "aws_cloudfront_distribution" "cdn" > default_cache_behavior > forwarded_values > cookies
1 # cloudfront.tf
2
3 resource "aws_cloudfront_distribution" "cdn" {
4   origin {
5     domain_name = aws_s3_bucket.web_bucket.bucket_regional_domain_name
6     origin_id   = "s3origin"
7
8     s3_origin_config {
9       origin_access_identity = ""
10    }
11  }
12
13  enabled           = true
14  is_ipv6_enabled   = true
15  default_root_object = "index.html"
16
17  default_cache_behavior {
18    allowed_methods = ["GET", "HEAD"]
19    cached_methods = ["GET", "HEAD"]
20    target_origin_id = "s3origin"
21
22    viewer_protocol_policy = "redirect-to-https"
23
24    forwarded_values {
25      query_string = false
26      cookies {
27        forward = "none"
28      }
29    }
30  }
31
32  restrictions {
33    geo_restriction {
34      restriction_type = "none"
35    }
36  }
37
38  viewer_certificate {
39    cloudfront_default_certificate = true
40  }
41
42  comment = "Web CD for Orientanet"
43  tags = {
44    Name = "CloudFrontWebCDN"
45  }
46 }
47

```

implementación de apigateway.tf

apigateway.tf X

apigateway.tf > ...

```
1  # api_gateway.tf
2
3  resource "aws_api_gateway_rest_api" "orientanet_api" {
4      name          = var.api_gateway_name
5      description = "API Gateway for Orientanet system"
6  }
7  |
```