What you should “feel” conceptually (the words that stick)

The compliance truth
PHI storage stays in Tokyo
Compute can move
Access can be global
Storage cannot

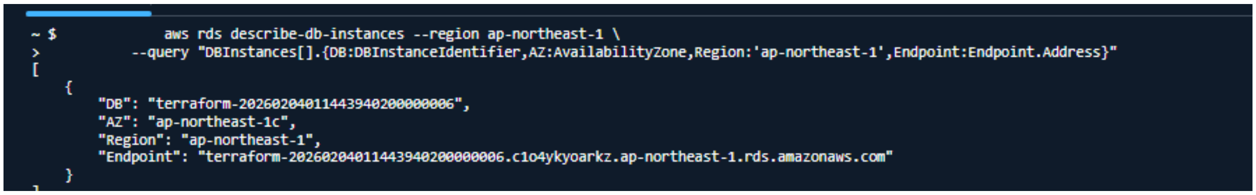
The engineering truth
TGW makes a controlled corridor
CloudFront keeps a single URL
São Paulo is stateless
Tokyo is authoritative

That’s the whole lab.
....for now.... you can always be a man.....

Quick verification commands (so they can prove it)
From São Paulo EC2 (SSM session)

Test network reachability to Tokyo RDS:

```
nc -vz <tokyo-rds-endpoint> 3306
```



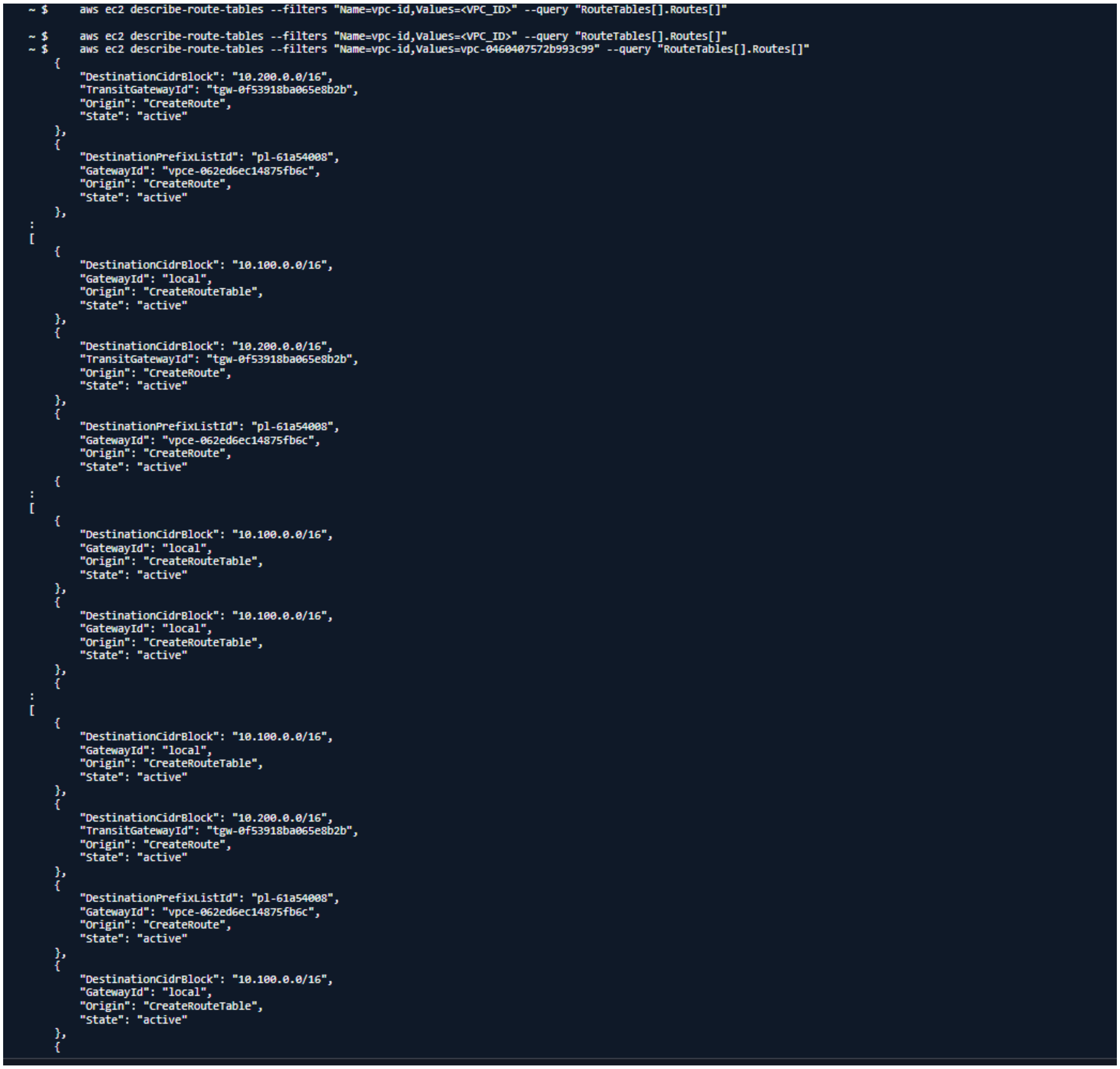
```
~ $            aws rds describe-db-instances --region ap-northeast-1 \
>          --query "DBInstances[].{DB:DBInstanceIdentifier,AZ:AvailabilityZone,Region:'ap-northeast-1',Endpoint:Endpoint.Address}"
[
    {
        "DB": "terraform-20260204011443940200000006",
        "AZ": "ap-northeast-1c",
        "Region": "ap-northeast-1",
        "Endpoint": "terraform-20260204011443940200000006.c1o4ykyoarkz.ap-northeast-1.rds.amazonaws.com"
    }
```

Then app-level verification:
submit record in São Paulo
confirm it appears when calling the Tokyo region (same data, one DB)

Confirm routes (AWS CLI)
For each region, verify route tables include the cross-region CIDR to TGW:

```
aws ec2 describe-route-tables --filters "Name=vpc-id,Values=<VPC_ID>" --query
"RouteTables[].Routes[]"
```

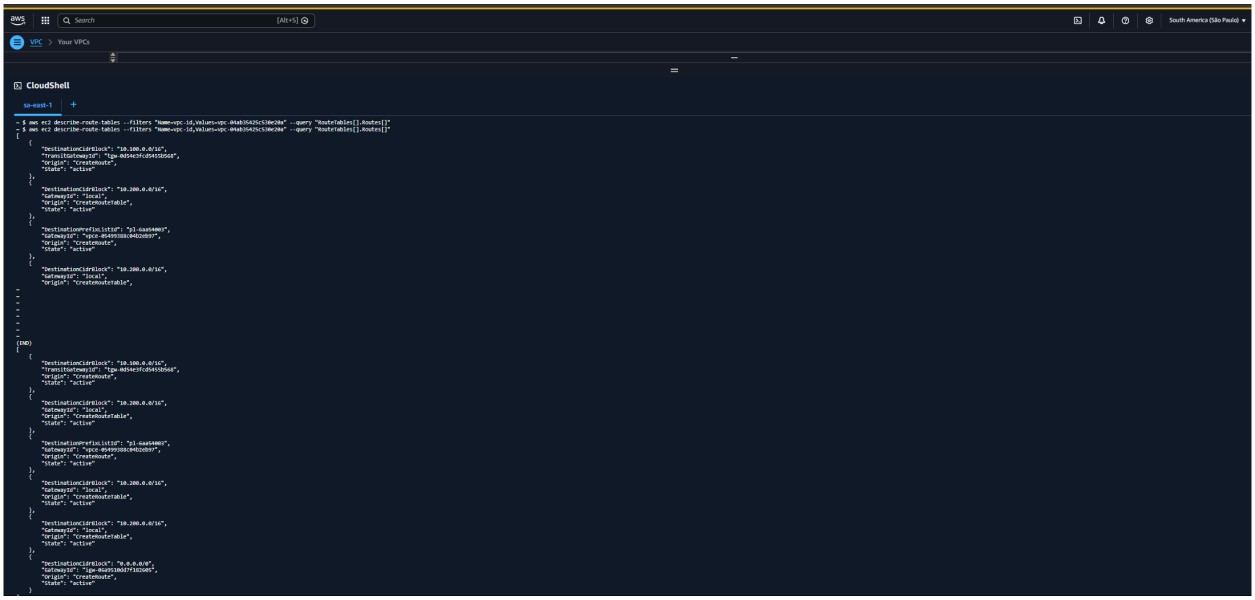
Tokyo



```
~ $     aws ec2 describe-route-tables --filters "Name=vpc-id,Values=<VPC_ID>" --query "RouteTables[].Routes[]"

~ $     aws ec2 describe-route-tables --filters "Name=vpc-id,Values=<VPC_ID>" --query "RouteTables[].Routes[]"
~ $     aws ec2 describe-route-tables --filters "Name=vpc-id,Values=vpc-0460407572b993c99" --query "RouteTables[].Routes[]"
    {
        "DestinationCidrBlock": "10.200.0.0/16",
        "TransitGatewayId": "tgw-0f53918ba065e8b2b",
        "Origin": "CreateRoute",
        "State": "active"
    },
    {
        "DestinationPrefixListId": "pl-61a54008",
        "GatewayId": "vpce-062ed6ec14875fb6c",
        "Origin": "CreateRoute",
        "State": "active"
    },
:
[
    {
        "DestinationCidrBlock": "10.100.0.0/16",
        "GatewayId": "local",
        "Origin": "CreateRouteTable",
        "State": "active"
    },
    {
        "DestinationCidrBlock": "10.200.0.0/16",
        "TransitGatewayId": "tgw-0f53918ba065e8b2b",
        "Origin": "CreateRoute",
        "State": "active"
    },
    {
        "DestinationPrefixListId": "pl-61a54008",
        "GatewayId": "vpce-062ed6ec14875fb6c",
        "Origin": "CreateRoute",
        "State": "active"
    {
:
[
    {
        "DestinationCidrBlock": "10.100.0.0/16",
        "GatewayId": "local",
        "Origin": "CreateRouteTable",
        "State": "active"
    },
    {
        "DestinationCidrBlock": "10.100.0.0/16",
        "GatewayId": "local",
        "Origin": "CreateRouteTable",
        "State": "active"
    },
    {
:
[
    {
        "DestinationCidrBlock": "10.100.0.0/16",
        "GatewayId": "local",
        "Origin": "CreateRouteTable",
        "State": "active"
    },
    {
        "DestinationCidrBlock": "10.200.0.0/16",
        "TransitGatewayId": "tgw-0f53918ba065e8b2b",
        "Origin": "CreateRoute",
        "State": "active"
    },
    {
        "DestinationPrefixListId": "pl-61a54008",
        "GatewayId": "vpce-062ed6ec14875fb6c",
        "Origin": "CreateRoute",
        "State": "active"
    },
    {
        "DestinationCidrBlock": "10.100.0.0/16",
        "GatewayId": "local",
        "Origin": "CreateRouteTable",
        "State": "active"
    },
    {
```

Sao Paulo

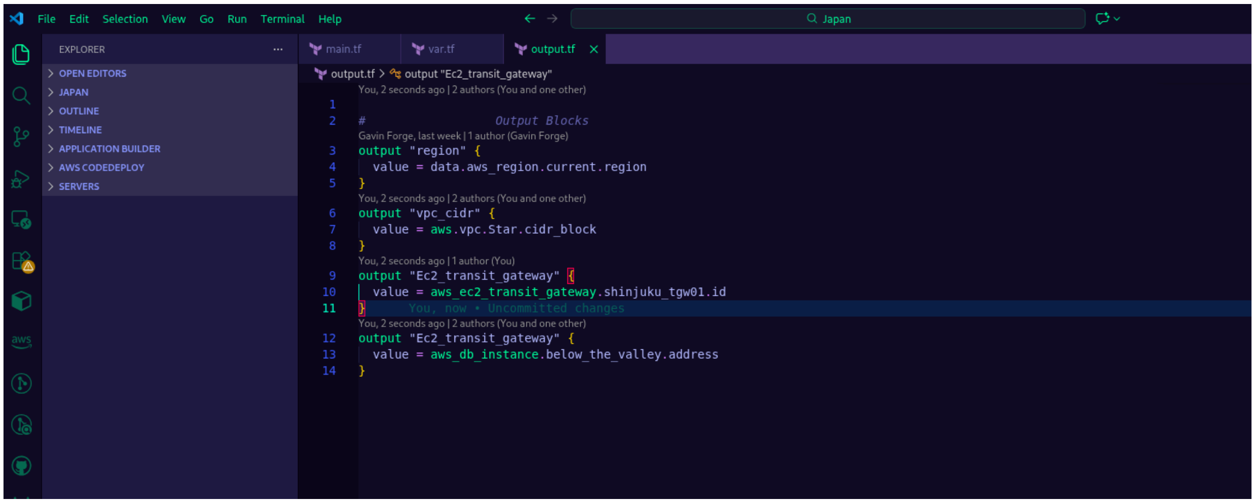


```
~ $ aws ec2 describe-route-tables --filters "Name=vpc-id,Values=vpc-04ab35425c530e20a" --query "RouteTables[].Routes[]"
~ $ aws ec2 describe-route-tables --filters "Name=vpc-id,Values=vpc-04ab35425c530e20a" --query "RouteTables[].Routes[]"
[
    {
        "DestinationCidrBlock": "10.100.0.0/16",
        "TransitGatewayId": "tgw-0d54e3fcd5455b568",
        "Origin": "CreateRoute",
        "State": "active"
    },
    {
        "DestinationCidrBlock": "10.200.0.0/16",
        "GatewayId": "local",
        "Origin": "CreateRouteTable",
        "State": "active"
    },
    {
        "DestinationPrefixListId": "pl-6aa54003",
        "GatewayId": "vpce-05499388c04b2eb97",
        "Origin": "CreateRoute",
        "State": "active"
    },
    {
        "DestinationCidrBlock": "10.200.0.0/16",
        "GatewayId": "local",
        "Origin": "CreateRouteTable",
~
~
~
~
~
~
~
~
(END)
[
    {
        "DestinationCidrBlock": "10.100.0.0/16",
        "TransitGatewayId": "tgw-0d54e3fcd5455b568",
        "Origin": "CreateRoute",
        "State": "active"
    },
    {
        "DestinationCidrBlock": "10.200.0.0/16",
        "GatewayId": "local",
        "Origin": "CreateRouteTable",
        "State": "active"
    },
    {
        "DestinationPrefixListId": "pl-6aa54003",
        "GatewayId": "vpce-05499388c04b2eb97",
        "Origin": "CreateRoute",
        "State": "active"
    },
    {
        "DestinationCidrBlock": "10.200.0.0/16",
        "GatewayId": "local",
        "Origin": "CreateRouteTable",
        "State": "active"
    },
    {
        "DestinationCidrBlock": "10.200.0.0/16",
        "GatewayId": "local",
        "Origin": "CreateRouteTable",
        "State": "active"
    },
    {
        "DestinationCidrBlock": "0.0.0.0/0",
        "GatewayId": "igw-06a9510dd7f182605",
        "Origin": "CreateRoute",
        "State": "active"
    }
```

Suggested structure for the student repo
/tokyo/ = “Lab2 + marginal TGW hub code”
/saopaulo/ = “Lab2 minus DB + TGW spoke code”

outputs.tf in Tokyo exports:

tokyo_vpc_cidr
tokyo_tgw_id
tokyo_rds_endpoint



```
You, 2 seconds ago | 2 authors (You and one other)

#            Output Blocks
Gavin Forge, last week | 1 author (Gavin Forge)
output "region" {
  value = data.aws_region.current.region
}
You, 2 seconds ago | 2 authors (You and one other)
output "vpc_cidr" {
  value = aws.vpc.Star.cidr_block
}
You, 2 seconds ago | 1 author (You)
output "Ec2_transit_gateway" {
  value = aws_ec2_transit_gateway.shinjuku_tgw01.id
}      You, now • Uncommitted changes
You, 2 seconds ago | 2 authors (You and one other)
output "Ec2_transit_gateway" {
  value = aws_db_instance.below_the_valley.address
}
```

São Paulo consumes those outputs (remote state) to configure routes and SG rules

I used datablocks, it is better.