

Lab 4

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1 Summary

This lab covered the creation and configuration of Amazon Virtual Private Clouds (VPCs) and Transit Gateway networking. Exercises 4.1 through 4.9 involved creating two isolated VPCs with custom CIDR blocks (172.16.0.0/16 and 172.17.0.0/16), provisioning subnets within each VPC in separate availability zones, and establishing a Transit Gateway to enable routing between the two otherwise-isolated networks. VPC attachments were created for each subnet and attached to the Transit Gateway, route tables were updated in each VPC to direct cross-VPC traffic through the Transit Gateway, and the resulting routes were verified using the AWS CLI. Exercises 8.1 through 8.4 covered Amazon CloudFront and Route 53, including configuring a CloudFront distribution to serve content from an origin, exploring edge location caching behavior, registering and managing DNS records in Route 53, and applying routing policies to direct traffic based on geographic and latency-based rules.

```
garre@garrettlaptop:~/development/notes$ aws ec2 create-vpc --cidr-block 172.16.0.0/16
{
  "Vpc": {
    "OwnerId": "349577273469",
    "InstanceTenancy": "default",
    "Ipv6CidrBlockAssociationSet": [],
    "CidrBlockAssociationSet": [
      {
        "AssociationId": "vpc-cidr-assoc-0bfb5bd83ff043949",
        "CidrBlock": "172.16.0.0/16",
        "CidrBlockState": {
          "State": "associated"
        }
      }
    ],
    "IsDefault": false,
    "VpcId": "vpc-08fe8ac778df57a5d",
    "State": "pending",
    "CidrBlock": "172.16.0.0/16",
    "DhcpOptionsId": "dopt-09cf0f9a7617b4b01"
  }
}
:...skipping...
{
  "Vpc": {
    "OwnerId": "349577273469",
    "InstanceTenancy": "default",
    "Ipv6CidrBlockAssociationSet": [],
    "CidrBlockAssociationSet": [
      {
        "AssociationId": "vpc-cidr-assoc-0bfb5bd83ff043949",
        "CidrBlock": "172.16.0.0/16",
        "CidrBlockState": {
          "State": "associated"
        }
      }
    ]
  }
}
```

Figure 1: Exercise 4.1 (1)

```
garre@garrettlaptop:~/development/notes$ aws ec2 describe-vpcs --vpc-ids vpc-08fe8ac778df57a5d
{
  "Vpcs": [
    {
      "OwnerId": "349577273469",
      "InstanceTenancy": "default",
      "CidrBlockAssociationSet": [
        {
          "AssociationId": "vpc-cidr-assoc-0bfb5bd83ff043949",
          "CidrBlock": "172.16.0.0/16",
          "CidrBlockState": {
            "State": "associated"
          }
        }
      ],
      "IsDefault": false,
      "BlockPublicAccessStates": {
        "InternetGatewayBlockMode": "off"
      },
      "VpcId": "vpc-08fe8ac778df57a5d",
      "State": "available",
      "CidrBlock": "172.16.0.0/16",
      "DhcpOptionsId": "dopt-09cf0f9a7617b4b01"
    }
  ]
}
```

Figure 2: Exercise 4.1 (2)

```
garre@garrettlaptop:~/development/notes$ aws ec2 create-subnet --vpc-id vpc-0414c3bc8e8d453db --cidr-block 172.16.100.0/24
-availability-zone us-east-1a
{
  "Subnet": {
    "AvailabilityZoneId": "use1-az1",
    "MapCustomerOwnedIpOnLaunch": false,
    "OwnerId": "349577273469",
    "AssignIpv6AddressOnCreation": false,
    "Ipv6CidrBlockAssociationSet": [],
    "SubnetArn": "arn:aws:ec2:us-east-1:349577273469:subnet/subnet-02cdd18e304c943e1",
    "EnableDns64": false,
    "Ipv6Native": false,
    "PrivateDnsNameOptionsOnLaunch": {
      "HostnameType": "ip-name",
      "EnableResourceNameDnsARecord": false,
      "EnableResourceNameDnsAAAARecord": false
    },
    "SubnetId": "subnet-02cdd18e304c943e1",
    "State": "available",
    "VpcId": "vpc-0414c3bc8e8d453db",
    "CidrBlock": "172.16.100.0/24",
    "AvailableIpAddressCount": 251,
    "AvailabilityZone": "us-east-1a",
    "DefaultForAz": false,
    "MapPublicIpOnLaunch": false
  }
}
```

Figure 3: Exercise 4.2 (1)

```
garre@garrettlaptop:~/development/notes$ aws ec2 describe-subnets --subnet-ids subnet-02cdd18e304c943e1
{
  "Subnets": [
    {
      "AvailabilityZoneId": "use1-az1",
      "MapCustomerOwnedIpOnLaunch": false,
      "OwnerId": "349577273469",
      "AssignIpv6AddressOnCreation": false,
      "Ipv6CidrBlockAssociationSet": [],
      "SubnetArn": "arn:aws:ec2:us-east-1:349577273469:subnet/subnet-02cdd18e304c943e1",
      "EnableDns64": false,
      "Ipv6Native": false,
      "PrivateDnsNameOptionsOnLaunch": {
        "HostnameType": "ip-name",
        "EnableResourceNameDnsARecord": false,
        "EnableResourceNameDnsAAAARecord": false
      },
      "BlockPublicAccessStates": {
        "InternetGatewayBlockMode": "off"
      },
      "SubnetId": "subnet-02cdd18e304c943e1",
      "State": "available",
      "VpcId": "vpc-0414c3bc8e8d453db",
      "CidrBlock": "172.16.100.0/24",
      "AvailableIpAddressCount": 251,
      "AvailabilityZone": "us-east-1a",
      "DefaultForAz": false,
      "MapPublicIpOnLaunch": false
    }
  ]
}
```

Figure 4: Exercise 4.2 (2)

```

garre@garrettlaptop:~/development/notes$ aws ec2 create-network-interface --private-ip-address 172.16.100.99 --subnet-id subnet-02cdd18e304c943e1
{
  "NetworkInterface": {
    "AvailabilityZone": "us-east-1a",
    "Description": "",
    "Groups": [
      {
        "GroupId": "sg-0dd5b2c38b191887d",
        "GroupName": "default"
      }
    ],
    "InterfaceType": "interface",
    "Ipv6Addresses": [],
    "MacAddress": "02:81:56:26:26:77",
    "NetworkInterfaceId": "eni-0d7bcb027f6f2cbf7",
    "OwnerId": "349577273469",
    "PrivateIpAddress": "172.16.100.99",
    "PrivateIpAddresses": [
      {
        "Primary": true,
        "PrivateIpAddress": "172.16.100.99"
      }
    ],
    "RequesterId": "AIDAVCZDN4B6XYE24LP0D",
    "RequesterManaged": false,
    "SourceDestCheck": true,
    "Status": "pending",
    "SubnetId": "subnet-02cdd18e304c943e1",
    "TagSet": [],
    "VpcId": "vpc-0414c3bc8e8d453db",
    "Operator": {
      "Managed": false
    }
  },
  "Status": "pending"
}

```

Figure 5: Exercise 4.3 (1)

```
garre@garrettlaptop:~/development/notes$ aws ec2 describe-network-interfaces --network-interface-ids eni-0d7bcb027f6f2cbf7
{
  "NetworkInterfaces": [
    {
      "AvailabilityZone": "us-east-1a",
      "Description": "",
      "Groups": [
        {
          "GroupId": "sg-0dd5b2c38b191887d",
          "GroupName": "default"
        }
      ],
      "InterfaceType": "interface",
      "Ipv6Addresses": [],
      "MacAddress": "02:81:56:26:26:77",
      "NetworkInterfaceId": "eni-0d7bcb027f6f2cbf7",
      "OwnerId": "349577273469",
      "PublicDnsName": "",
      "PrivateIpAddress": "172.16.100.99",
      "PrivateIpAddresses": [
        {
          "Primary": true,
          "PrivateIpAddress": "172.16.100.99"
        }
      ],
      "RequesterId": "AIDAVCZDN4B6XYE24LP0D",
      "RequesterManaged": false,
      "SourceDestCheck": true,
      "Status": "available",
      "SubnetId": "subnet-02cdd18e304c943e1",
      "TagSet": [],
      "VpcId": "vpc-0414c3bc8e8d453db",
      "Operator": {

```

Figure 6: Exercise 4.3 (2)

```
garre@garrettlaptop:~/development/notes$ aws ec2 create-internet-gateway
{
  "InternetGateway": {
    "Attachments": [],
    "InternetGatewayId": "igw-01cb78e8bd32aaed9",
    "OwnerId": "349577273469",
    "Tags": []
  }
}
```

Figure 7: Exercise 4.4 (1)

```
garre@garrettlaptop:~/development/notes$ aws ec2 attach-internet-gateway --internet-gateway-id igw-01cb78e8bd32aaed9 --vpc-id vpc-0414c3bc8e8d453db
garre@garrettlaptop:~/development/notes$ aws ec2 describe-route-tables --filters Name=vpc-id,Values=vpc-0414c3bc8e8d453db
{
  "RouteTables": [
    {
      "Associations": [
        {
          "Main": true,
          "RouteTableAssociationId": "rtbassoc-0478927546b9f0649",
          "RouteTableId": "rtb-074e5a02bacb71f1f",
          "AssociationState": {
            "State": "associated"
          }
        }
      ],
      "PropagatingVgws": [],
      "RouteTableId": "rtb-074e5a02bacb71f1f",
      "Routes": [
        {
          "DestinationCidrBlock": "172.16.0.0/16",
          "GatewayId": "local",
          "Origin": "CreateRouteTable",
          "State": "active"
        }
      ],
      "Tags": [],
      "VpcId": "vpc-0414c3bc8e8d453db",
      "OwnerId": "349577273469"
    }
  ]
}
```

Figure 8: Exercise 4.4 (2)

```
garre@garrettlaptop:~/development/notes$ aws ec2 create-route --route-table-id rtb-074e5a02bacb71f1f --destination-cidr-block "0.0.0.0/0" --gateway-id igw-01cb78e8bd32aaed9
{
  "Return": true
}
```

Figure 9: Exercise 4.4 (3)

```
garre@garrettlaptop:~/development/notes$ aws ec2 create-security-group --group-name "web-ssh" --description "Web and SSH traffic" --vpc-id vpc-0414c3bc8e8d453db
{
  "GroupId": "sg-0be0c864f3a02e19a",
  "SecurityGroupArn": "arn:aws:ec2:us-east-1:349577273469:security-group/sg-0be0c864f3a02e19a"
}
```

Figure 10: Exercise 4.5 (1)

```
garre@garrettlaptop:~/development/notes$ aws ec2 describe-security-groups --group-id sg-0be0c864f3a02e19a
{
  "SecurityGroups": [
    {
      "GroupId": "sg-0be0c864f3a02e19a",
      "IpPermissionsEgress": [
        {
          "IpProtocol": "-1",
          "UserIdGroupPairs": [],
          "IpRanges": [
            {
              "CidrIp": "0.0.0.0/0"
            }
          ],
          "Ipv6Ranges": [],
          "PrefixListIds": []
        }
      ],
      "VpcId": "vpc-0414c3bc8e8d453db",
      "SecurityGroupArn": "arn:aws:ec2:us-east-1:349577273469:security-group/sg-0be0c864f3a02e19a",
      "OwnerId": "349577273469",
      "GroupName": "web-ssh",
      "Description": "Web and SSH traffic",
      "IpPermissions": [
        {
          "IpProtocol": "tcp",
          "FromPort": 80,
          "ToPort": 80,
          "UserIdGroupPairs": [],
          "IpRanges": [
            {
              "CidrIp": "0.0.0.0/0"
            }
          ]
        }
      ]
    }
  ]
}
```

Figure 11: Exercise 4.5 (2)


```
garre@garrettlaptop:~/development/notes$ aws ec2 create-network-acl --vpc-id vpc-0414c3bc8e8d453db
{
  "NetworkAcl": {
    "Associations": [],
    "Entries": [
      {
        "CidrBlock": "0.0.0.0/0",
        "Egress": true,
        "IcmpTypeCode": {},
        "PortRange": {},
        "Protocol": "-1",
        "RuleAction": "deny",
        "RuleNumber": 32767
      },
      {
        "CidrBlock": "0.0.0.0/0",
        "Egress": false,
        "IcmpTypeCode": {},
        "PortRange": {},
        "Protocol": "-1",
        "RuleAction": "deny",
        "RuleNumber": 32767
      }
    ],
    "IsDefault": false,
    "NetworkAclId": "acl-0670f89aeb5c4d9b3",
    "Tags": [],
    "VpcId": "vpc-0414c3bc8e8d453db",
    "OwnerId": "349577273469"
  },
  "ClientToken": "fcb1ef7e-dfa8-47f1-a02a-bc4441a23b74"
}
```

Figure 12: Exercise 4.6 (1)

```
garre@garrettlaptop:~/development/notes$ aws ec2 describe-network-acls --network-acl-id acl-0670f89aeb5c4d9b3
{
  "NetworkAcls": [
    {
      "Associations": [],
      "Entries": [
        {
          "CidrBlock": "0.0.0.0/0",
          "Egress": true,
          "Protocol": "-1",
          "RuleAction": "deny",
          "RuleNumber": 32767
        },
        {
          "CidrBlock": "0.0.0.0/0",
          "Egress": false,
          "PortRange": {
            "From": 22,
            "To": 22
          },
          "Protocol": "6",
          "RuleAction": "allow",
          "RuleNumber": 70
        },
        {
          "CidrBlock": "0.0.0.0/0",
          "Egress": false,
          "Protocol": "-1",
          "RuleAction": "deny",
          "RuleNumber": 32767
        }
      ],
      "IsDefault": false,
      "Network_acl_id": "acl-0670f89aeb5c4d9b3",
    }
  ]
}
```

Figure 13: Exercise 4.6 (2)

```
garre@garrettlaptop:~/development/notes$ aws ec2 associate-address --allocation-id eipalloc-0d427825a94ad45df --network-inte
rface-id eni-0d7bcb027f6f2cbf7
{
  "AssociationId": "eipassoc-0c09141308d248848"
}
```

Figure 14: Exercise 4.7 (1)

```
garre@garrettlaptop:~/development/notes$ aws ec2 describe-network-interfaces --network-interface-ids eni-0d7bcb027f6f2cbf7
{
  "NetworkInterfaces": [
    {
      "Association": {
        "AllocationId": "eipalloc-0d427825a94ad45df",
        "AssociationId": "eipassoc-0c09141308d248848",
        "IpOwnerId": "349577273469",
        "PublicDnsName": "",
        "PublicIp": "100.30.207.253"
      },
      "AvailabilityZone": "us-east-1a",
      "Description": "",
      "Groups": [
        {
          "GroupId": "sg-0dd5b2c38b191887d",
          "GroupName": "default"
        }
      ],
      "InterfaceType": "interface",
      "Ipv6Addresses": [],
      "MacAddress": "02:81:56:26:26:77",
      "NetworkInterfaceId": "eni-0d7bcb027f6f2cbf7",
      "OwnerId": "349577273469",
      "PublicDnsName": "",
      "PrivateIpAddress": "172.16.100.99",
      "PrivateIpAddresses": [
        {
          "Association": {
            "AllocationId": "eipalloc-0d427825a94ad45df",
            "AssociationId": "eipassoc-0c09141308d248848",

```

Figure 15: Exercise 4.7 (2)

```
garre@garrettlaptop:~/development/notes$ aws ec2 create-transit-gateway-vpc-attachment --transit-gateway-id tgw-0acd402fce62a318c --vpc-id vpc-04f08d3c85b2e0524 --subnet-ids subnet-0234447e5739c40c2
{
  "TransitGatewayVpcAttachment": {
    "TransitGatewayAttachmentId": "tgw-attach-077d026864d98558f",
    "TransitGatewayId": "tgw-0acd402fce62a318c",
    "VpcId": "vpc-04f08d3c85b2e0524",
    "VpcOwnerId": "349577273469",
    "State": "pending",
    "SubnetIds": [
      "subnet-0234447e5739c40c2"
    ],
    "CreationTime": "2026-02-21T14:57:52+00:00",
    "Options": {
      "DnsSupport": "enable",
      "SecurityGroupReferencingSupport": "enable",
      "Ipv6Support": "disable",
      "ApplianceModeSupport": "disable"
    }
  }
}
```

Figure 16: Exercise 4.8 (1)

```
garre@garrettlaptop:~/development/notes$ aws ec2 create-transit-gateway-vpc-attachment --transit-gateway-id tgw-0acd402fce6a318c --vpc-id vpc-0414c3bc8e8d453db --subnet-ids subnet-02cdd18e304c943e1
{
  "TransitGatewayVpcAttachment": {
    "TransitGatewayAttachmentId": "tgw-attach-0e31789585627e631",
    "TransitGatewayId": "tgw-0acd402fce62a318c",
    "VpcId": "vpc-0414c3bc8e8d453db",
    "VpcOwnerId": "349577273469",
    "State": "pending",
    "SubnetIds": [
      "subnet-02cdd18e304c943e1"
    ],
    "CreationTime": "2026-02-21T15:01:36+00:00",
    "Options": {
      "DnsSupport": "enable",
      "SecurityGroupReferencingSupport": "enable",
      "Ipv6Support": "disable",
      "ApplianceModeSupport": "disable"
    }
  }
}
```

Figure 17: Exercise 4.8 (2)

```
garre@garrettlaptop:~/development/notes$ aws ec2 search-transit-gateway-routes --transit-gateway-route-table-id tgw-rtb-0a85014347c9c970d --filters "Name=type,Values=static,propagated"
{
  {
    "DestinationCidrBlock": "172.16.0.0/16",
    "TransitGatewayRouteTableAnnouncementId": "",
    "TransitGatewayAttachments": [
      {
        "ResourceId": "vpc-0414c3bc8e8d453db",
        "TransitGatewayAttachmentId": "tgw-attach-0e31789585627e631",
        "ResourceType": "vpc"
      }
    ],
    "Type": "propagated",
    "State": "active"
  },
  {
    "DestinationCidrBlock": "172.17.0.0/16",
    "TransitGatewayRouteTableAnnouncementId": "",
    "TransitGatewayAttachments": [
      {
        "ResourceId": "vpc-04f08d3c85b2e0524",
        "TransitGatewayAttachmentId": "tgw-attach-077d026864d98558f",
        "ResourceType": "vpc"
      }
    ],
    "Type": "propagated",
    "State": "active"
  }
]
```

Figure 18: Exercise 4.8 (3)

```
garre@garrettlaptop:~/development/notes$ aws ec2 describe-route-tables --filters "Name=route.transit-gateway-id,Values=tgw-0acd402fce62a318c"
{
  "Associations": [
    {
      "Main": true,
      "RouteTableAssociationId": "rtbassoc-0478927546b9f0649",
      "RouteTableId": "rtb-074e5a02bacb71f1f",
      "AssociationState": {
        "State": "associated"
      }
    }
  ],
  "PropagatingVgws": [],
  "RouteTableId": "rtb-074e5a02bacb71f1f",
  "Routes": [
    {
      "DestinationCidrBlock": "172.16.0.0/16",
      "GatewayId": "local",
      "Origin": "CreateRouteTable",
      "State": "active"
    },
    {
      "DestinationCidrBlock": "172.17.0.0/16",
      "TransitGatewayId": "tgw-0acd402fce62a318c",
      "Origin": "CreateRoute",
      "State": "active"
    },
    {
      "DestinationCidrBlock": "0.0.0.0/0",

```

Figure 19: Exercise 4.8 (4)

```
garre@garrettlaptop:~/development/notes$ aws ec2 create-transit-gateway-route --destination-cidr-block 172.16.100.64/29 --transit-gateway-route-table-id tgw-rtb-0a85014347c9c970d --blackhole
{
  "Route": {
    "DestinationCidrBlock": "172.16.100.64/29",
    "Type": "static",
    "State": "blackhole"
  }
}
```

Figure 20: Exercise 4.9 (1)

```

garre@garrettlaptop:~/development/notes$ aws ec2 delete-transit-gateway-vpc-attachment --transit-g
attachment-id tgw-attach-077d026864d98558f
aws ec2 delete-transit-gateway-vpc-attachment --transit-gateway-attachment-id tgw-attach-0e3178958
{
  "TransitGatewayVpcAttachment": {
    "TransitGatewayAttachmentId": "tgw-attach-077d026864d98558f",
    "TransitGatewayId": "tgw-0acd402fce62a318c",
    "VpcId": "vpc-04f08d3c85b2e0524",
    "VpcOwnerId": "349577273469",
    "State": "deleting",
    "CreationTime": "2026-02-21T14:57:52+00:00"
  }
}
{
  "TransitGatewayVpcAttachment": {
    "TransitGatewayAttachmentId": "tgw-attach-0e31789585627e631",
    "TransitGatewayId": "tgw-0acd402fce62a318c",
    "VpcId": "vpc-0414c3bc8e8d453db",
    "VpcOwnerId": "349577273469",
    "State": "deleting",
    "CreationTime": "2026-02-21T15:01:36+00:00"
  }
}

```

Figure 21: Exercise 4.9 (2)

Public
garrett-gruss.com
Info
Delete zone
Test record
Configure query logging

▶ Hosted zone details
Edit hosted zone

Records (3)
Accelerated recovery
DNSSEC signing
Hosted zone tags (0)

Records (3)
Info
Refresh
Delete record
Import zone file
Create record

Automatic mode is the current search behavior optimized for best filter results. [To change modes go to settings.](#)

Filter records by property or value
Type
Routing p...
Alias
1

<input type="checkbox"/>	Record ...	Type	Routin...	Differ...	Alias	Value/Route traffic to
<input type="checkbox"/>	garrett-gr...	A	Simple	-	No	18.208.216.173
<input type="checkbox"/>	garrett-gr...	NS	Simple	-	No	ns-2029.awsdns-61.co.L ns-97.awsdns-12.com. ns-1134.awsdns-13.org. ns-843.awsdns-41.net.
<input type="checkbox"/>	garrett-gr...	SOA	Simple	-	No	ns-2029.awsdns-61.co.L

Figure 22: Exercise 8.1

Health check with id 043a4ffc-72de-4939-b5da-20aa4d9e2a19 has been created successfully.

lab-8-health
Info
Delete
Invert
Disable
Edit

Configuration

ID <input type="checkbox"/> 043a4ffc-72de-4939-b5da-20aa4d9e2a19	URL http://18.208.216.173:80/test.html	Specified endpoint by IP address
State <input checked="" type="checkbox"/> Enabled	Status <input type="radio"/> Unknown	Inverted No

▶ Advanced configuration

Figure 23: Exercise 8.2

Record for garrett-gruss.com was successfully created.
Route 53 propagates your changes to all of the Route 53 authoritative DNS servers within 60 seconds. Use "View status" button to check propagation status.

View status

Public
garrett-gruss.com
Info
Delete zone
Test record
Configure query logging

Hosted zone details
Edit hosted zone

Records (4)
Accelerated recovery
DNSSEC signing
Hosted zone tags (0)

Records (4)
Info

Delete record
Import zone file
Create record

Automatic mode is the current search behavior optimized for best filter results. [To change modes go to settings.](#)

Type
Routing p...
Alias
1

<input type="checkbox"/>	Record ...	Type	Routin...	Differ...	Alias	Value/Route traffic to	TTL (s...	Health ...	Evalua...
<input type="checkbox"/>	garrett-gr...	NS	Simple	-	No	ns-2029.awsdns-61.co.uk. ns-97.awsdns-12.com. ns-1134.awsdns-13.org. ns-843.awsdns-41.net.	172800	-	-
<input type="checkbox"/>	garrett-gr...	SOA	Simple	-	No	ns-2029.awsdns-61.co.uk, a...	900	-	-
<input type="checkbox"/>	www.garr...	A	Failover	Primary	No	18.208.216.173	300	043a4ffc-...	-
<input type="checkbox"/>	www.garr...	A	Failover	Secondary	No	34.204.52.35	300	-	-

Figure 24: Exercise 8.3

CloudFront
Distributions
Create distribution

Step 1
Choose a plan
Step 2
Get started
Step 3
Specify origin
Step 4
Enable security
Step 5
Review and create

Review and create

General configuration

Distribution name
garrett pain

Description
-

Billing
Free (\$0/month)

Today's pro-rated charge (estimate)
\$0

Origin

Because you granted CloudFront access to your origin, CloudFront can write and update S3 bucket policies that restrict access to your S3 origin to CloudFront.

S3 origin
s3://www.garrett-gruss.com/hello-world.txt

Origin path
-

Grant CloudFront access to origin
Yes

Enable Origin Shield
No

Connection attempts
3

Connection timeout
10

Cache settings

CloudFront will apply default cache settings tailored to serving content from a S3 origin. You can customize settings after you create your distribution.

Figure 25: Exercise 8.4 (1)

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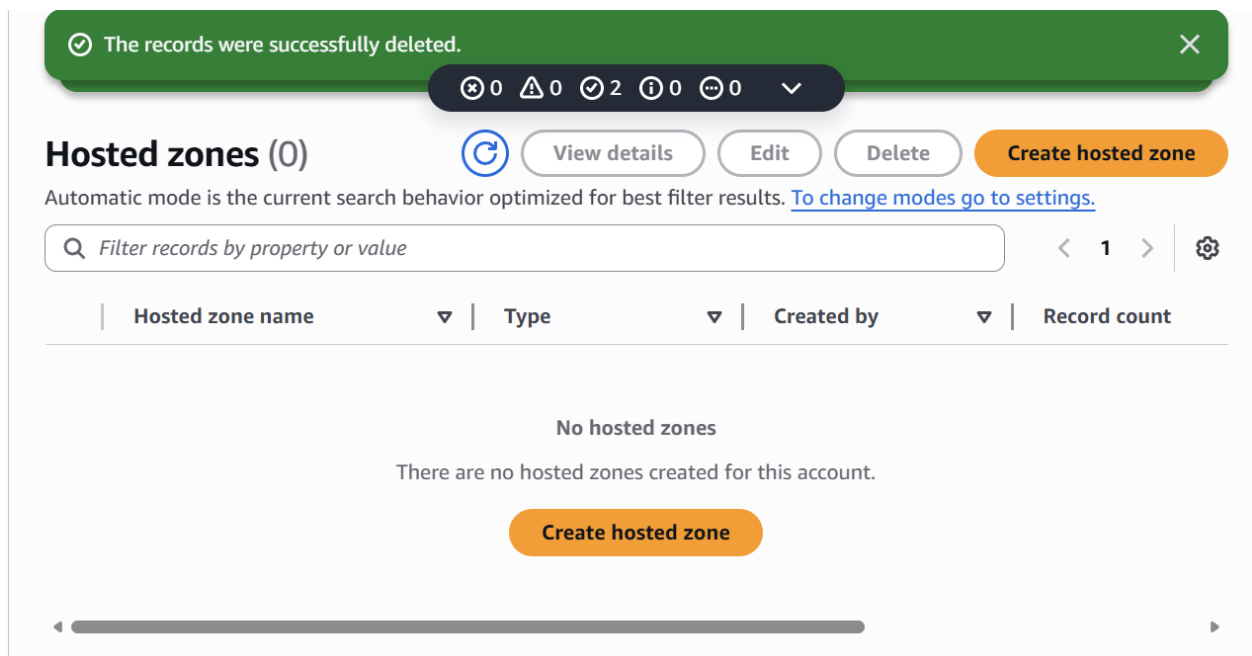


Figure 26: Exercise 8.4 (2)