

Question 1: (a) Create VPC and add internet gateway to it

The screenshot shows the AWS Management Console VPC dashboard. A notification banner at the top introduces VPC encryption control. The left sidebar lists navigation options under 'Virtual private cloud' and 'Security'. The main content area shows 'Your VPCs' with a table listing VPCs. One VPC, 'vpc-01979dd9374e07da9', is selected, and its details are shown below. The 'Assign' column indicates it is associated with an internet gateway.

Name	VPC ID	State	Encryption c...	Encryption control ...	Block Public...	IPv...
Assign	vpc-01979dd9374e07da9	Available	-	-	Off	10.0.0.0/16

vpc-01979dd9374e07da9 / Assign

Details	Resource map	CIDRs	Flow logs	Tags	Integrations
VPC ID vpc-01979dd9374e07da9 DNS resolution Enabled Main network ACL acl-0350655f-1b13-4...	State Available Tenancy default Default VPC No	Block Public Access Off DHCP option set dopt-08179b08112a94c17 IPv4 CIDR 10.0.0.0/16	DNS hostnames Enabled Main route table rtb-08abfb389cee04a7 IPv6 pool		

The screenshot shows the AWS Management Console VPC dashboard for internet gateways. The left sidebar is the same as the previous screenshot. The main content area shows 'Internet gateways (2)' with a table listing available gateways. Two gateways are listed, both in an 'Attached' state, and are associated with the VPC 'vpc-01979dd9374e07da9'.

Name	Internet gateway ID	State	VPC ID	Owner
-	igw-022db2d30470a01d3	Attached	vpc-00c14ca1b7e33e580	033691785749
Assign	igw-0c2824bc37adc642e	Attached	vpc-01979dd9374e07da9 Assign	033691785749

Select an internet gateway above

User "exam" deleted.

Step 1

Specify user details

Set permissions

Review and create

Retrieve password

Specify user details

User details

User name

Assign

The user name can have up to 64 characters. Valid characters: A-Z, a-z, 0-9, and +, -, @, _ (hyphen)

☒ Provide user access to the AWS Management Console - optional

In addition to console access, users with `SigV4LocalDevelopmentAccess` permissions can use the same console credentials for programmatic access without the need for access keys.

Console password

☐ Autogenerated password

You can view the password after you create the user.

☒ Custom password

Enter a custom password for the user.

@Bagn2007

- Must be at least 8 characters long
- Must include at least three of the following mix of character types: uppercase letters (A-Z), lowercase letters (a-z), numbers (0-9), and symbols (! @ # \$ % ^ & * () _ - ~ (hyphen) = [] { } ')

☒ Show password

☐ Users must create a new password at next sign-in - Recommended

Users automatically get the `IAMUserChangePassword` policy to allow them to change their own password.

If you are creating programmatic access through access keys or service-specific credentials for AWS CodeCommit or Amazon Keyspaces, you can generate them after you create this IAM user.

[Learn more](#)

Cancel

Next

User "exam" deleted.

Set permissions

Add user to an existing group or create a new one. Using groups is a best-practice way to manage user's permissions by job functions. [Learn more](#)

Step 1
Specify user details

Step 2
Set permissions

Step 3
Review and create

Step 4
Retrieve password

Permissions options

☐ Add user to group
Add user to an existing group, or create a new group. We recommend using groups to manage user permissions by job function.

☐ Copy permissions
Copy all group memberships, attached managed policies, and inline policies from an existing user.

☒ Attach policies directly
Attach a managed policy directly to a user. As a best practice, we recommend attaching policies to a group instead. Then, add the user to the appropriate group.

Permissions policies (1/1423)

Choose one or more policies to attach to your new user.

Policy name	Type	Attached entities
<input type="checkbox"/> AccessAnalyzerServiceRolePolicy	AWS managed	0
<input checked="" type="checkbox"/> AdministratorAccess	AWS managed - job function	5
<input type="checkbox"/> AdministratorAccess-Amplify	AWS managed	0
<input type="checkbox"/> AdministratorAccess-AWSElasticBeanstalk	AWS managed	0
<input type="checkbox"/> AIOPAssistantIncidentReportPolicy	AWS managed	0
<input type="checkbox"/> AIOPAssistantPolicy	AWS managed	0
<input type="checkbox"/> AIOPConsoleAdminPolicy	AWS managed	0

Assign / 0 - - Now - - -

toso (0336-9178-5749) ▼
Assign

aws

Search

[Alt+S]

United States (N. Virginia)

Assign

Amazon S3

Buckets

Create bucket

Create bucket ^{info}

Buckets are containers for data stored in S3.

General configuration

AWS Region
US East (N. Virginia) us-east-1

Bucket type ^{info}

☒ **General purpose**
Recommended for most use cases and access patterns. General purpose buckets are the original S3 bucket type. They allow a mix of storage classes that redundantly store objects across multiple Availability Zones.

☐ **Directory**
Recommended for low-latency use cases. These buckets use only the S3 Express One Zone storage class, which provides faster processing of data within a single Availability Zone.

Bucket name ^{info}

assign3bucket-100

Bucket names must be 3 to 63 characters and unique within the global namespace. Bucket names must also begin and end with a letter or number. Valid characters are a-z, 0-9, periods (.), and hyphens (-). [Learn more](#) ^u

Copy settings from existing bucket - optional
Only the bucket settings in the following configuration are copied.

☒ **Choose bucket**

Format: s3://bucket/prefix

Object Ownership ^{info}

Control ownership of objects written to this bucket from other AWS accounts and the use of access control lists (ACLs). Object ownership determines who can specify access to objects.

Object Ownership

☒ **ACLs disabled (recommended)**
All objects in this bucket are owned by this account. Access to this bucket and its objects is specified using only policies.

☐ **ACLs enabled**
Objects in this bucket can be owned by other AWS accounts. Access to this bucket and its objects can be specified using ACLs.

Object Ownership
Bucket owner enforced

Block Public Access settings for this bucket

Public access is granted to buckets and objects through access control lists (ACLs), bucket policies, access point policies, or all. In order to ensure that public access to this bucket and its objects is blocked, turn on Block all public access. These settings

CloudShell

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aws

Search

[Alt+S]

United States (N. Virginia)

Assign

Amazon S3

Buckets

Create bucket

Bucket Versioning ^{info}

Versioning is a means of keeping multiple variants of an object in the same bucket. You can use versioning to preserve, retrieve, and restore every version of every object stored in your Amazon S3 bucket. With versioning, you can easily recover from both unintended user actions and application failures. [Learn more](#) ^u

Bucket Versioning

☐ Disable

☒ Enable

Tags - optional

You can use bucket tags to analyze, manage and specify permissions for a bucket. [Learn more](#) ^u

☒ You can use s3:ListTagsForResource, s3:TagResource, and s3:UntagResource APIs to manage tags on S3 general purpose buckets for access control in addition to cost allocation and resource organization. To ensure a seamless transition, please provide permissions to s3:ListTagsForResource, s3:TagResource, and s3:UntagResource actions. [Learn more](#) ^u

No tags associated with this bucket.

☒ Add new tag

You can add up to 50 tags.

Default encryption ^{info}

Server-side encryption is automatically applied to new objects stored in this bucket.

Encryption type ^{info}

Secure your objects with two separate layers of encryption. For details on pricing, see [DSSE-KMS pricing](#) on the [Storage](#) tab of the [Amazon S3 pricing page](#). ^u

☒ Server-side encryption with Amazon S3 managed keys (SSE-S3)

☐ Server-side encryption with AWS Key Management Service keys (SSE-KMS)

☐ Dual-layer server-side encryption with AWS Key Management Service keys (DSSE-KMS)

Bucket Key
Using an S3 Bucket Key for SSE-KMS reduces encryption costs by lowering calls to AWS KMS. S3 Bucket Keys aren't supported for DSSE-KMS. [Learn more](#) ^u

☐ Disable

☒ Enable

Advanced settings

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[Objects](#)
[Metadata](#)
[Properties](#)
[Permissions](#)
[Metrics](#)
[Management](#)
[Access Points](#)

Objects (1)

Copy S3 URI

Copy URL

Download

Open

Delete

Actions

Create folder

Upload

Find objects by prefix

Show versions

Name

Type

Last modified

Size

Storage class

index.html

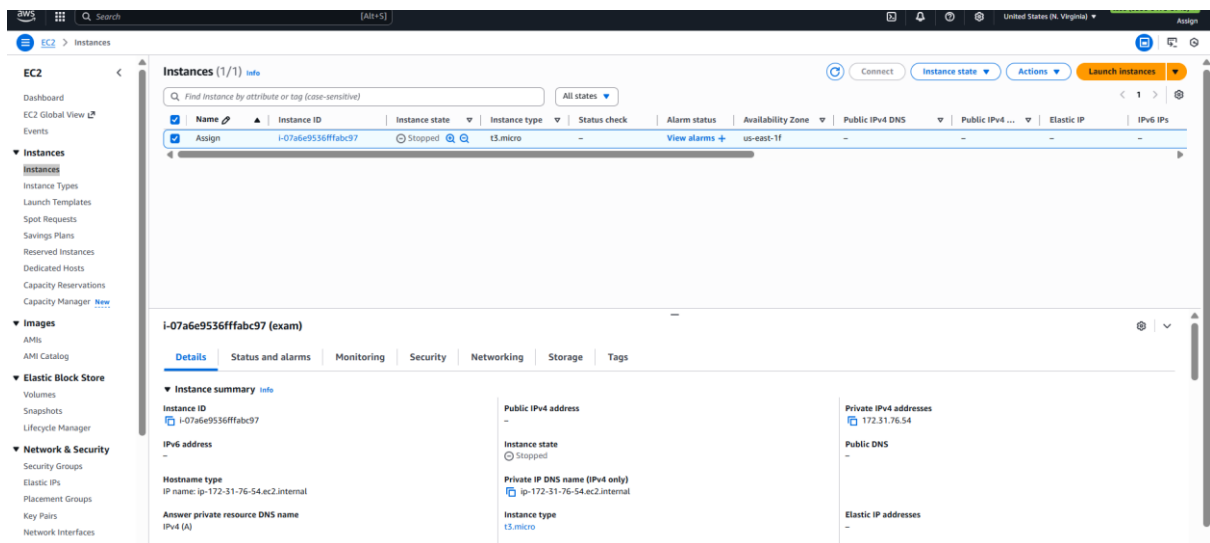
html

November 30, 2025, 12:20:16 (UTC+05:30)

59.4 KB

Standard

(d) Create a Ec2 instance



The screenshot displays the AWS Management Console for the EC2 service. The left sidebar shows the navigation menu with categories like EC2, Images, Elastic Block Store, and Network & Security. The main content area shows the 'Instances (1/1)' page. A table lists the instance 'i-07a6e9536ffabc97' with a status of 'Stopped'. Below the table, the 'Instance summary' section provides details for the instance, including its ID, IP addresses, and instance type (t3.micro).

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 DNS	Public IPv4 ...	Elastic IP	IPv6 IPs
Assign	i-07a6e9536ffabc97	Stopped	t3.micro	-	View alarms +	us-east-1f	-	-	-	-

Instance summary

Instance ID: i-07a6e9536ffabc97

IPv6 address: -

Hostname type: IP name: ip-172-31-76-54.ec2.internal

Answer private resource DNS name: IPv4 (A)

Public IPv4 address: -

Instance state: Stopped

Private IP DNS name (IPv4 only): ip-172-31-76-54.ec2.internal

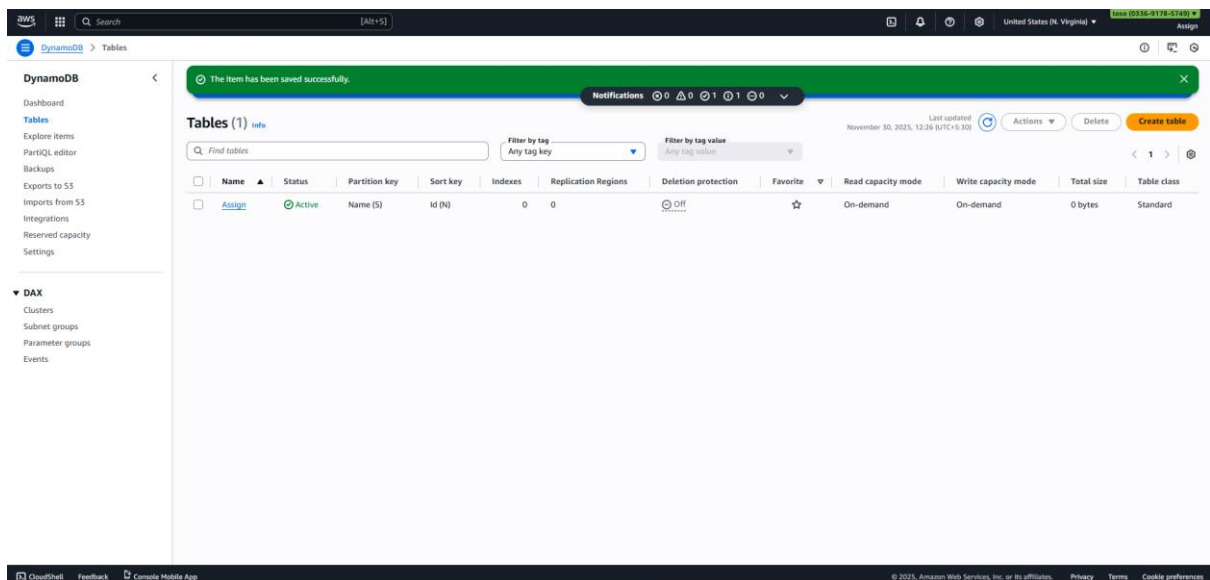
Instance type: t3.micro

Private IPv4 addresses: 172.31.76.54

Public DNS: -

Elastic IP addresses: -

(e) Create a Dynamodb table and add some entries in it and then delete a entry from it



The screenshot displays the AWS Management Console for the DynamoDB service. The left sidebar shows the navigation menu with categories like DynamoDB, DAX, and Settings. The main content area shows the 'Tables (1)' page. A table named 'Name (S)' is listed with a status of 'Active'. The table has a partition key of 'Id (N)' and a sort key of 'Id (N)'. The table is currently empty.

Name	Status	Partition key	Sort key	Indexes	Replication Regions	Deletion protection	Favorite	Read capacity mode	Write capacity mode	Total size	Table class
Assign	Active	Name (S)	Id (N)	0	0	Off	☆	On-demand	On-demand	0 bytes	Standard

DynamoDB

Dashboard

Tables

Explore items

PartiQL editor

Backups

Exports to S3

Imports from S3

Integrations

Reserved capacity

Settings

▼ DAX

Clusters

Subnet groups

Parameter groups

Events

Share your feedback on Amazon DynamoDB

Your feedback is an important part of helping us provide a better customer experience. Take this short survey to let us know how we're doing.

Share feedback

Tables (1)

Filter by tag

Any tag key

Filter by tag value

Any tag value

Find tables

Assign

Assign

Settings

Indexes

Monitor

Global tables

Backups

Exports and streams

Permissions

Protect your DynamoDB table from accidental writes and deletes

When you turn on point-in-time recovery (PITR), DynamoDB backs up your table data automatically so that you can restore to any given second in the preceding 1 to 35 days. Additional charges apply. [Learn more](#)

Edit PITR

General information

Partition key

Name (String)

Sort key

Id (Number)

Capacity mode

On-demand

Table status

Active

Table size

0 bytes

Alarms

No active alarms

Average item size

0 bytes

Resource-based policy

Not active

Amazon Resource Name (ARN)

arn:aws:dynamodb:us-east-1:033691785749:table/Assign

Additional info

Read/write capacity

The read/write capacity mode controls how you are charged for read and write throughput and how you manage capacity.

Edit

Capacity mode

On-demand

DynamoDB

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Share feedback

Tables (1)

Filter by tag

Any tag key

Filter by tag value

Any tag value

Find tables

Assign

Assign

Autopreview

View table details

▼ Scan or query items

Scan

Query

Select a table or index

Table - Assign

Select attribute projection

All attributes

Filters - optional

Run

Reset

Completed

Items returned: 2

Items scanned: 2

Efficiency: 100%

RCUs consumed: 2

Table: Assign - Items returned (2)

Scan started on November 30, 2025, 12:52:03

Actions

Create item

	Name (String)	Id (Number)
<input type="checkbox"/>	Tsao	2
<input type="checkbox"/>	Sahoo	1

DynamoDB

Dashboard

Tables

Explore items

PartiQL editor

Backups

Exports to S3

Imports from S3

Integrations

Reserved capacity

Settings

▼ DAX

Clusters

Subnet groups

Parameter groups

Events

Selected items have been deleted successfully.

Notifications

Autopreview

View table details

▼ Scan or query items

Scan

Query

Select a table or index

Table - Assign

Select attribute projection

All attributes

Filters - optional

Run

Reset

Completed

Items returned: 2

Items scanned: 2

Efficiency: 100%

RCUs consumed: 2

Table: Assign - Items returned (1)

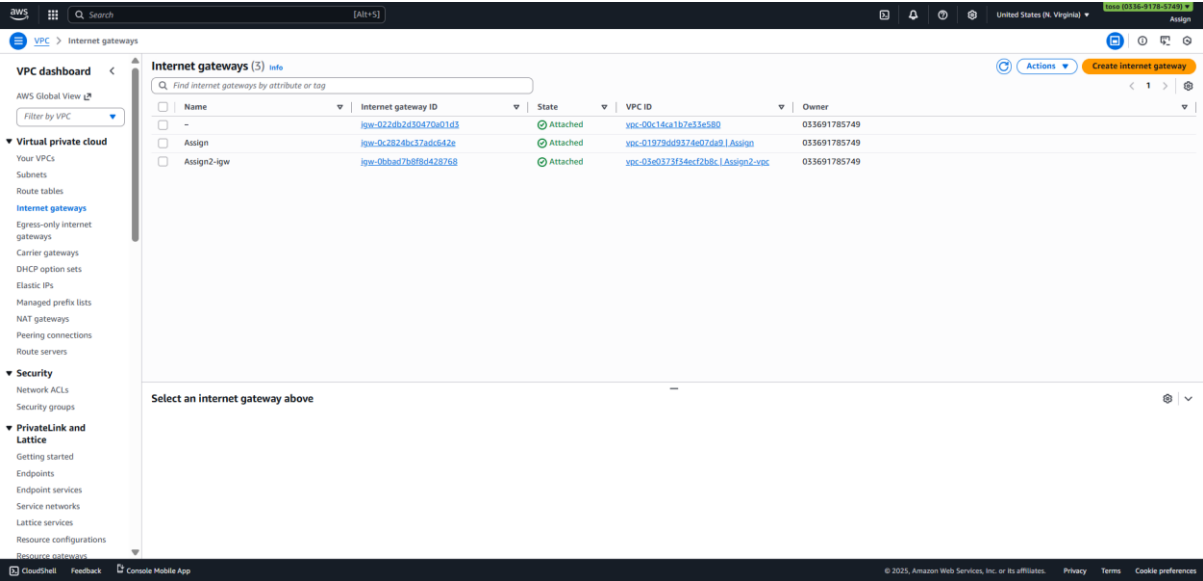
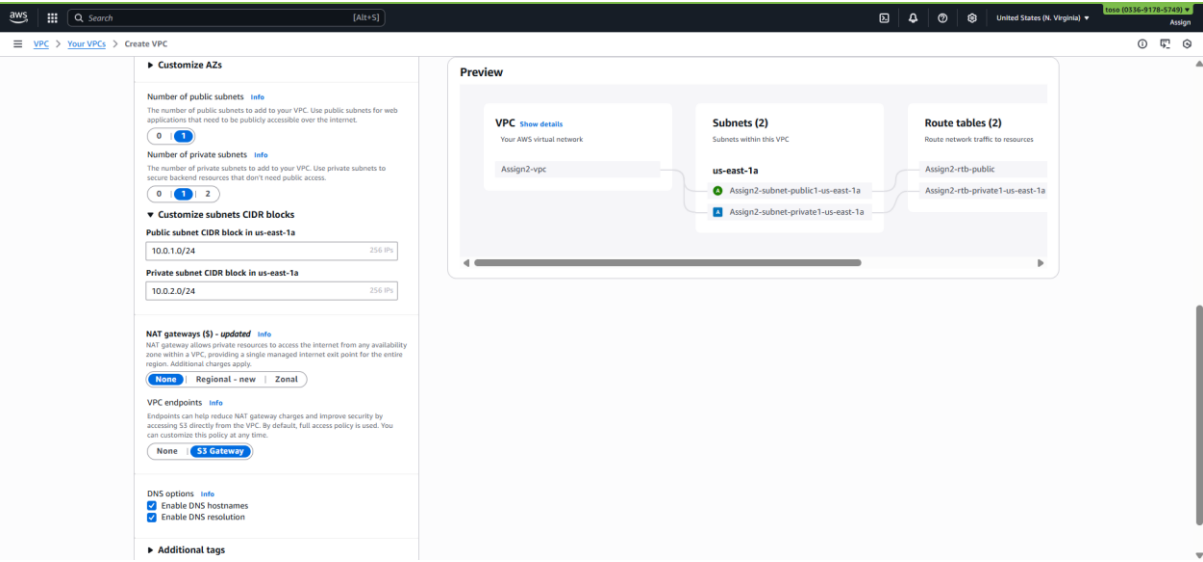
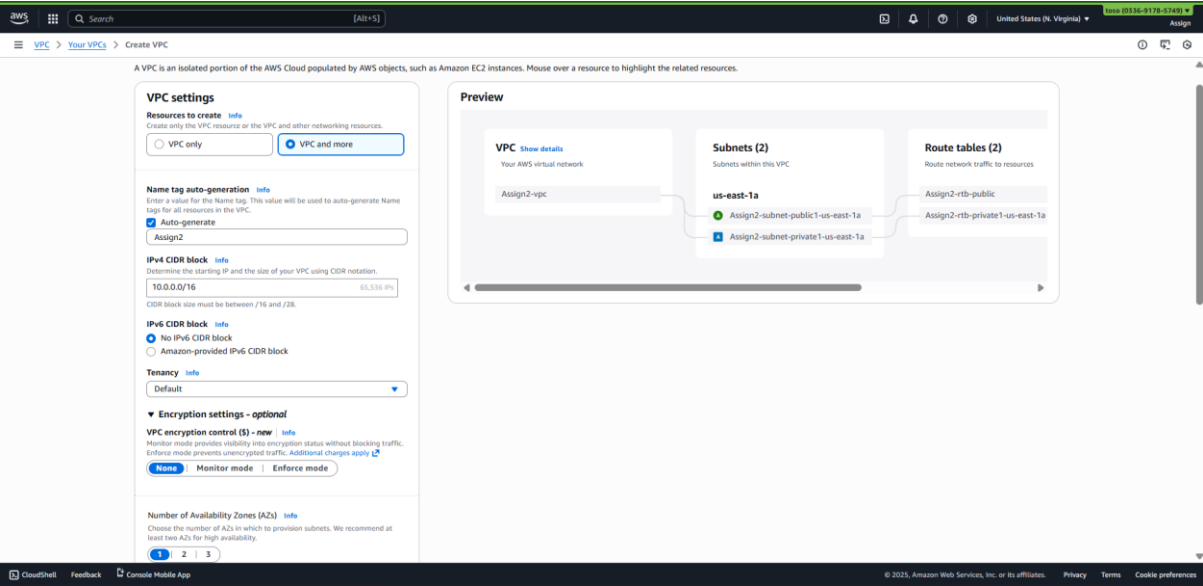
Scan started on November 30, 2025, 12:52:03

Actions

Create item

	Name (String)	Id (Number)
<input type="checkbox"/>	Sahoo	1

Question 2: Secure ML Pipeline Network Architecture



NAT gateways (2) info

Find NAT gateways by attribute or tag

Name	NAT gateway ID	Connectivity...	State	State message	Availability ...	Route table ID	Primary public IP...	Primary private L...	Primary network...
Assign2	nat-175b93a269f294503	Public	Available	-	Regional	rtb-0807d0444...	52.55.216.100	-	-
Assign	nat-1302c043f60a227d1	Public	Available	-	Regional	rtb-0842a77d6...	3.232.125.196	-	-

Select a NAT gateway

Updated routes for rtb-04c048af07204e84a / Assign2-rb-public successfully

rtb-04c048af07204e84a / Assign2-rb-public

Details info

Route table ID: rtb-04c048af07204e84a

VPC: vpc-03ae0573f34ecf2b8c | Assign2-vpc

Main: No

Owner ID: 033691785749

Explicit subnet associations: subnet-0e78b6c726a891aae / Assign2-subnet-public1-us-east-1a

Edge associations: -

Routes (3)

Destination	Target	Status	Propagated	Route Origin
0.0.0.0/16	nat-175b93a269f294503	Active	No	Create Route
0.0.0.0/0	igw-0bbad7b8f8d428768	Active	No	Create Route
10.0.0.0/16	local	Active	No	Create Route Table

Question 3: ML Team Access Control & Data Governance

User groups (4) info

A user group is a collection of IAM users. Use groups to specify permissions for a collection of users.

Group name	Users	Permissions	Creation time
admin	1	Defined	2 months ago
DataScientists	0	Not defined	31 minutes ago
DataStewards	0	Not defined	18 minutes ago
MLEngineers	0	Not defined	20 minutes ago

Identity and Access Management (IAM)

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Resource control policies

IAM Identity Center

AWS Organizations

User groups (4)

A user group is a collection of IAM users. Use groups to specify permissions for a collection of users.

Search

Group name	Users	Permissions	Creation time
admin	1	Defined	2 months ago
DataScientists	0	Defined	7 hours ago
DataStewards	0	Defined	6 hours ago
MLEngineers	0	Defined	6 hours ago

Delete

Create group

CloudShell

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Resource control policies

IAM Identity Center

User groups (3)

A user group is a collection of IAM users. Use groups to specify permissions for a collection of users.

Search

Group name	Users	Permissions	Creation time
DataScientists	1	Defined	8 days ago
DataStewards	1	Defined	8 days ago
MLEngineers	1	Defined	8 days ago

Delete

Create group

CloudShell

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Identity and Access Management (IAM)

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IAM Identity Center

Role MLTraining created.

View role

X

Roles (8)

An IAM role is an identity you can create that has specific permissions with credentials that are valid for short durations. Roles can be assumed by entities that you trust.

Search

Role name	Trusted entities	Last activity
AWSServiceRoleForNATGateway	AWS Service: ec2-nat-gateway (Service-Linked Role)	9 days ago
AWSServiceRoleForResourceExplorer	AWS Service: resource-explorer-2 (Service-Linked Role)	27 minutes ago
AWSServiceRoleForSupport	AWS Service: support (Service-Linked Role)	-
AWSServiceRoleForTrustedAdvisor	AWS Service: trustedadvisor (Service-Linked Role)	-
ec2ssm	AWS Service: ec2	10 days ago
EMRServiceRole	AWS Service: ec2	-
MLTraining	AWS Service: machinelearning	-
SageMakerServiceRole	AWS Service: sagemaker	-

Roles Anywhere

Authenticate your non AWS workloads and securely provide access to AWS services.

Manage

Access AWS from your non AWS workloads

Operate your non AWS workloads using the same authentication and

X.509 Standard

Use your own existing PKI infrastructure or use [AWS Certificate Manager](#)

Temporary credentials

Use temporary credentials with ease and benefit from the enhanced

CloudShell

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