

DYNAMODB

DynamoDB is a schemaless database that requires only a table name and a primary key when you create the table. It is a fully managed NOSQL database service provided by AWS, designed for ultra-fast and predictable performance at any scale. It supports key-value data models, automatically handles data replication, and scaling.

Create a table in DynamoDB with name “Class” and set the partition key as “RollNo” Number value and leave other settings to default values.

Create table

Table details [Info](#)

DynamoDB is a schemaless database that requires only a table name and a primary key when you create the table.

Table name
This will be used to identify your table.

Between 3 and 255 characters, containing only letters, numbers, underscores (_), hyphens (-), and periods (.).

Partition key
The partition key is part of the table's primary key. It is a hash value that is used to retrieve items from your table and allocate data across hosts for scalability and availability.

1 to 255 characters and case sensitive.

Sort key - optional
You can use a sort key as the second part of a table's primary key. The sort key allows you to sort or search among all items sharing the same partition key.

1 to 255 characters and case sensitive.

Table settings

☒ **Default settings**
The fastest way to create your table. You can modify most of these settings after your table has been created. To modify these settings now, choose 'Customize settings'.

☐ **Customize settings**
Use these advanced features to make DynamoDB work better for your needs.

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Then click on create table

Create table

Capacity mode	On-demand	Yes
Maximum read capacity units	-	Yes
Maximum write capacity units	-	Yes
Local secondary indexes	-	No
Global secondary indexes	-	Yes
Encryption key management	Owned by Amazon DynamoDB	Yes
Deletion protection	Off	Yes
Resource-based policy	Not active	Yes

Tags
Tags are pairs of keys and optional values, that you can assign to AWS resources. You can use tags to control access to your resources or track your AWS spending.
No tags are associated with the resource.

You can add 50 more tags.

Cancel

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Table created successfully

The screenshot shows the AWS DynamoDB console's 'Tables' page. A green notification bar at the top indicates 'The Class table was created successfully.' The table 'Class' is listed with status 'Active'. The table details show a partition key of 'RollNo (S)', a sort key of '-', and a replication region of 'us-east-1'. The table is currently 'On-demand' and has 'Deletion protection' turned 'Off'.

Name	Status	Partition key	Sort key	Indexes	Replication Regions	Deletion protection	Favorite	Read capacity mode	Write capacity mode
Class	Active	RollNo (S)	-	0	0	Off	☆	On-demand	On-demand

Now go to Explore items, select the table that we created just now and create a item

The screenshot shows the AWS DynamoDB console's 'Explore items' page. The 'Class' table is selected. The 'Scan' operation is completed, showing 'Items returned: 0' and 'Efficiency: 100%'. The table details show a partition key of 'RollNo (S)', a sort key of '-', and a replication region of 'us-east-1'. The table is currently 'On-demand' and has 'Deletion protection' turned 'Off'.

Name	Status	Partition key	Sort key	Indexes	Replication Regions	Deletion protection	Favorite	Read capacity mode	Write capacity mode
Class	Active	RollNo (S)	-	0	0	Off	☆	On-demand	On-demand

In the Form section, enter the attributes and their values and then click on create item

The screenshot shows the 'Create item' interface in the AWS Management Console for a DynamoDB table named 'Class'. The breadcrumb navigation is 'DynamoDB > Explore items: Class > Create item'. There are two tabs: 'Form' (selected) and 'JSON view'. Below the tabs, a message states: 'You can add, remove, or edit the attributes of an item. You can nest attributes inside other attributes up to 32 levels deep. [Learn more](#)'. The 'Attributes' section contains a table with the following data:

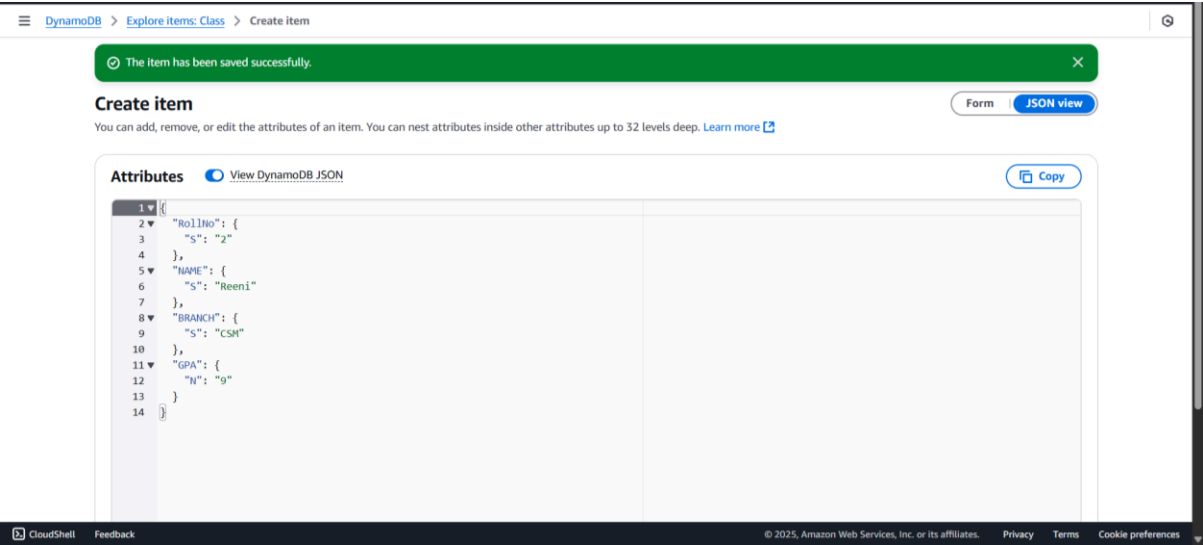
Attribute name	Value	Type	
RollNo - Partition key	1	String	
Name	Sanjeeva	String	Remove
Branch	CSE	String	Remove
GPA	9	Number	Remove

At the bottom right of the attributes table are two buttons: 'Cancel' and 'Create item'. Above the table is a link 'Add new attribute'. At the very bottom of the console window, there is a footer with 'CloudShell', 'Feedback', and copyright information for Amazon Web Services.

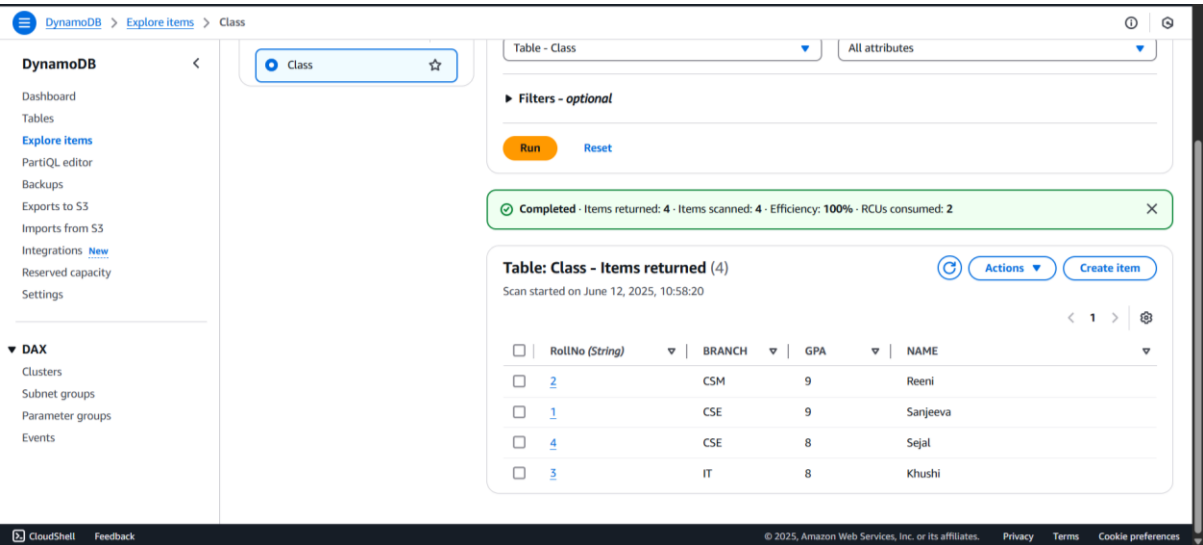
Item created Successfully

The screenshot shows the 'Class' table view in the AWS Management Console. The breadcrumb navigation is 'DynamoDB > Explore items > Class'. A green banner at the top states: 'The item has been saved successfully.' On the left sidebar, the 'DynamoDB' section is expanded, showing 'Tables (1)' with 'Class' selected. The main content area is titled 'Class' and has an 'Autopreview' toggle. Under 'Scan or query items', the 'Scan' radio button is selected. Below this, 'Select a table or index' is set to 'Table - Class' and 'Select attribute projection' is set to 'All attributes'. There is a 'Filters - optional' section with 'Run' and 'Reset' buttons. A green status bar indicates: 'Completed · Items returned: 0 · Items scanned: 0 · Efficiency: 100% · RCUs consumed: 2'. At the bottom, a section titled 'Table: Class - Items returned (1)' shows 'Scan started on June 12, 2025, 10:49:03' and includes 'Actions' and 'Create item' buttons. The footer of the console window is visible at the bottom.

We can also create item using JSON format



All items created in the table



Now by using the SCAN in the table, we can scan the items based the filters that we provide

The screenshot shows the AWS DynamoDB console interface. On the left is a navigation menu with options like Dashboard, Tables, Explore items, PartiQL editor, Backups, Exports to S3, Imports from S3, Integrations, Reserved capacity, Settings, DAX, Clusters, Subnet groups, Parameter groups, and Events. The main area is titled 'DynamoDB > Explore items > Class'. It features a 'Filters - optional' section with a table for filtering:

Attribute name	Condition	Type	Value	
GPA	Equal to	Number	9	Remove

Below the filter table are 'Add filter', 'Run', and 'Reset' buttons. A green status bar indicates: 'Completed - Items returned: 2 - Items scanned: 4 - Efficiency: 50% - RCUs consumed: 2'. The results section is titled 'Table: Class - Items returned (2)' and shows a table of results:

	RollNo (String)	BRANCH	GPA	NAME
<input type="checkbox"/>	2	CSM	9	Reeni
<input type="checkbox"/>	1	CSE	9	Sanjeeva

The footer includes 'CloudShell', 'Feedback', and copyright information for Amazon Web Services.

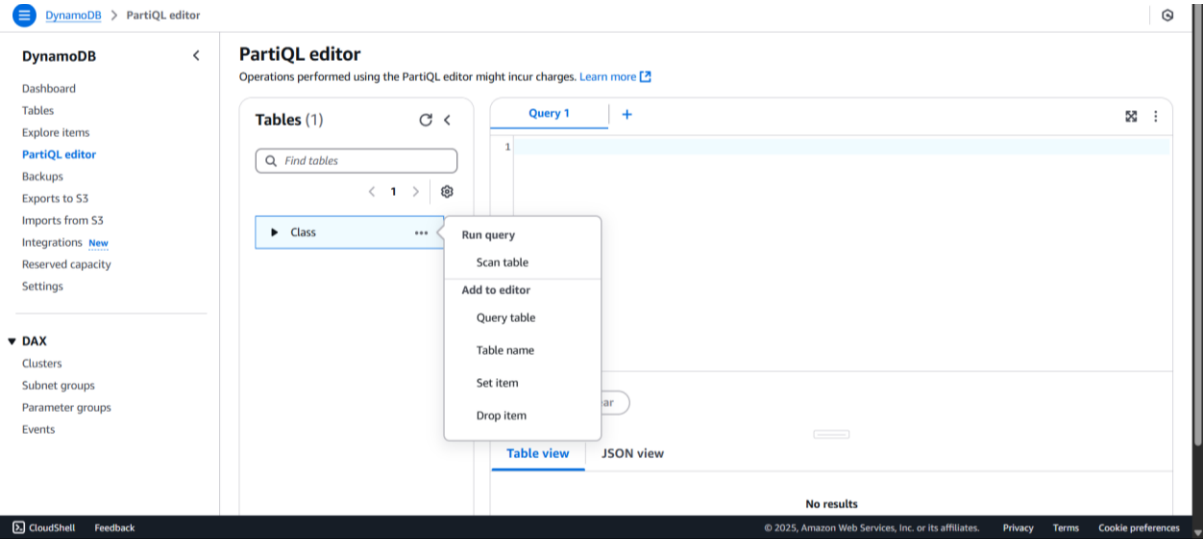
We can also perform Query operation based on the Partition key

The screenshot shows the AWS DynamoDB console interface. On the left is a navigation menu with options like Dashboard, Tables, Explore items, PartiQL editor, Backups, Exports to S3, Imports from S3, Integrations, Reserved capacity, Settings, DAX, Clusters, Subnet groups, Parameter groups, and Events. The main area is titled 'DynamoDB > Explore items > Class'. It features a 'Query' tab selected, with a 'Find tables' search bar and a 'Class' table selected. The 'Query' section includes 'Select a table or index' (Table - Class) and 'Select attribute projection' (All attributes). The 'Partition key: RollNo' is set to '1'. Below this is a 'Filters - optional' section with 'Run' and 'Reset' buttons. A green status bar indicates: 'Completed - Items returned: 1 - Items scanned: 1 - Efficiency: 100% - RCUs consumed: 0.5'. The results section is titled 'Table: Class - Items returned (1)' and shows a table of results:

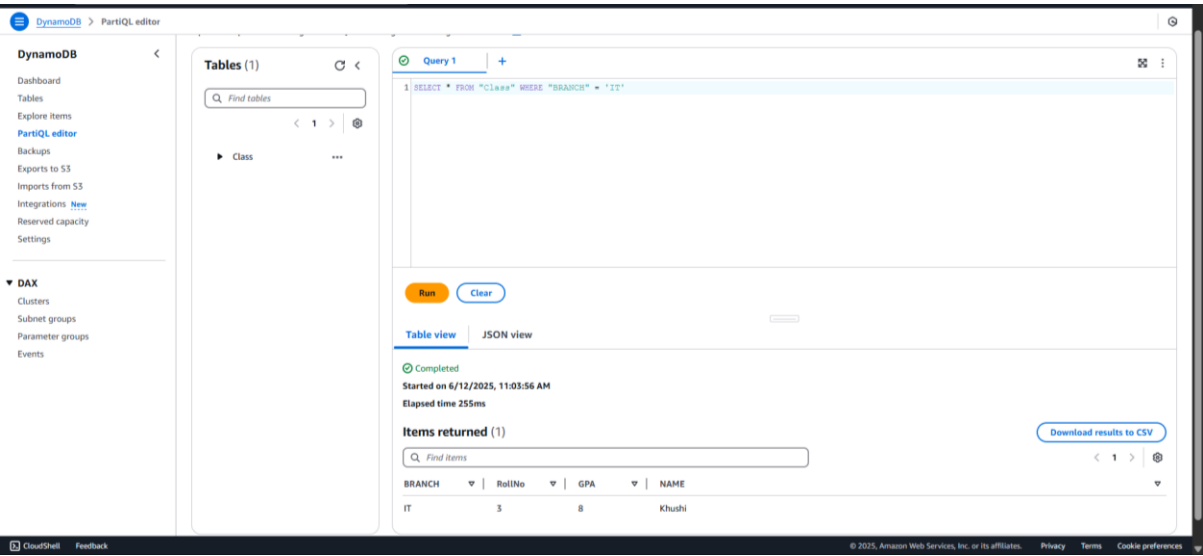
	RollNo (String)	BRANCH	GPA	NAME
<input type="checkbox"/>	1	CSE	9	Sanjeeva

The footer includes 'CloudShell', 'Feedback', and copyright information for Amazon Web Services.

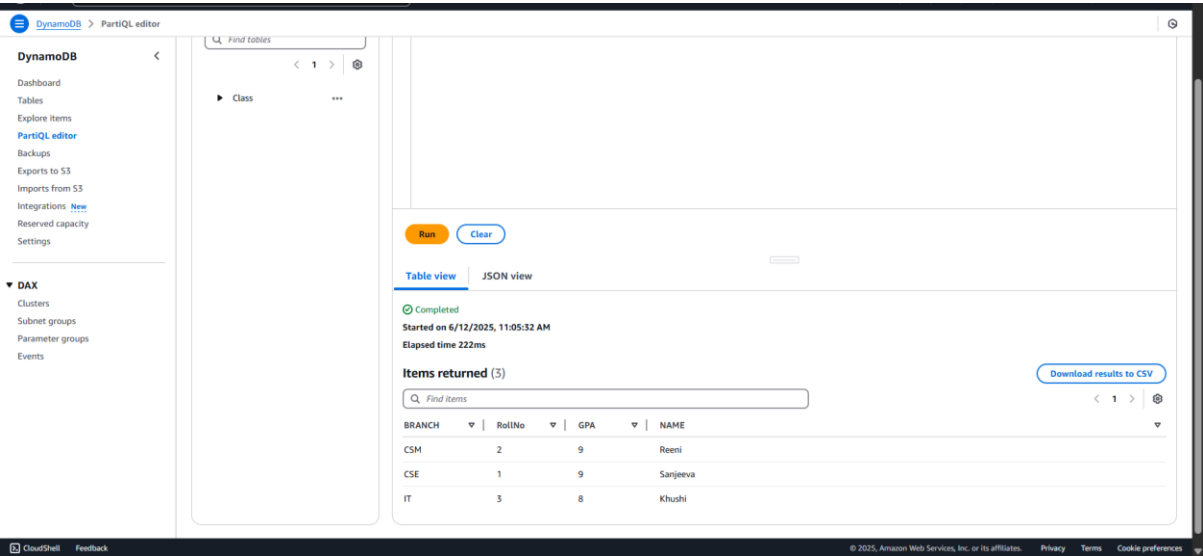
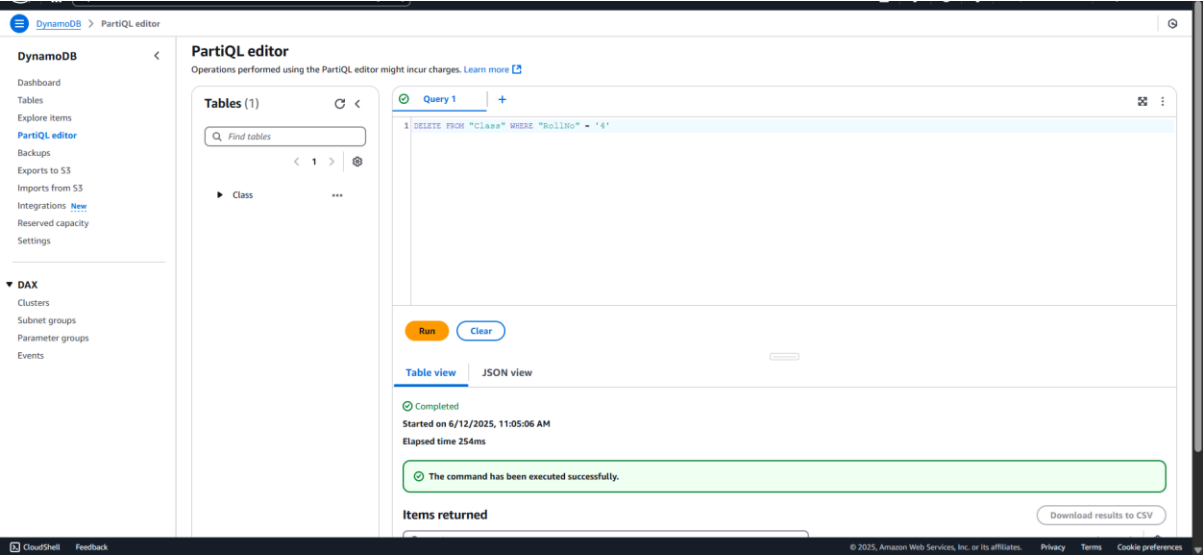
Now go to PartiQL and here we can perform Query in the form SQL



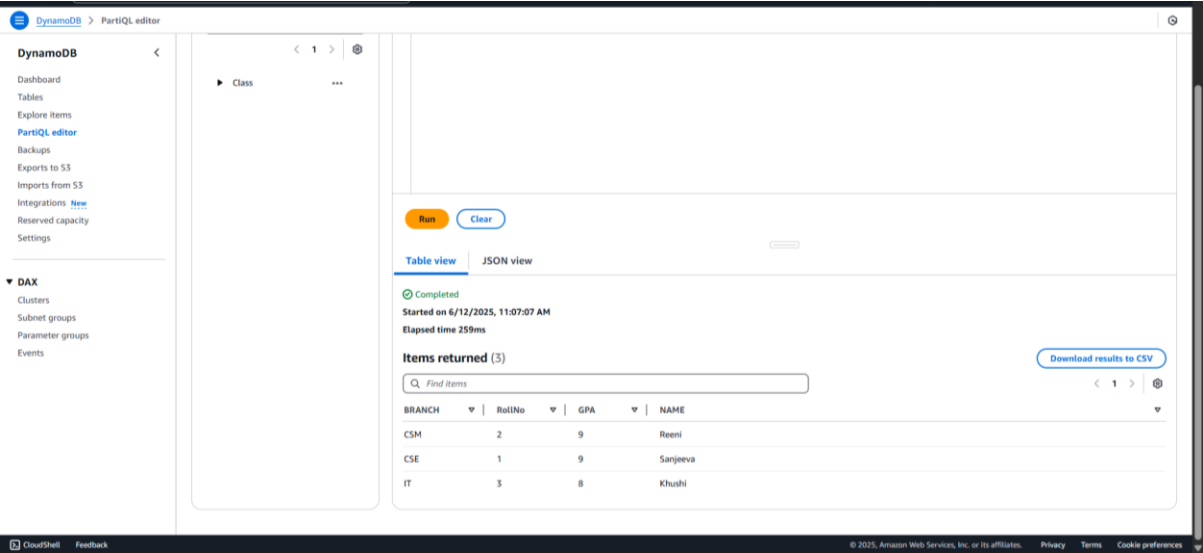
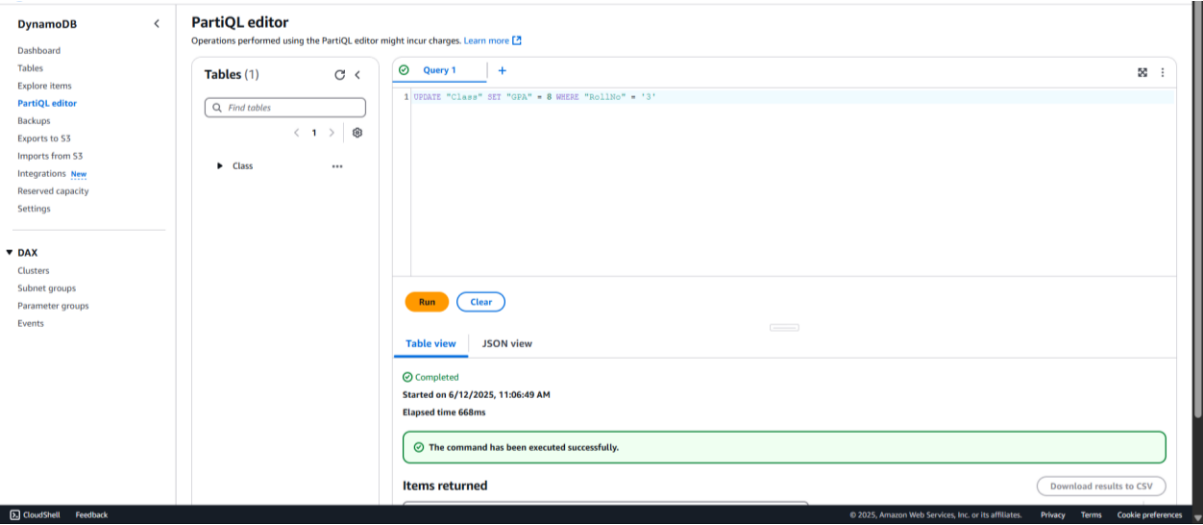
Select operation is performed



Delete operation is also performed from the table

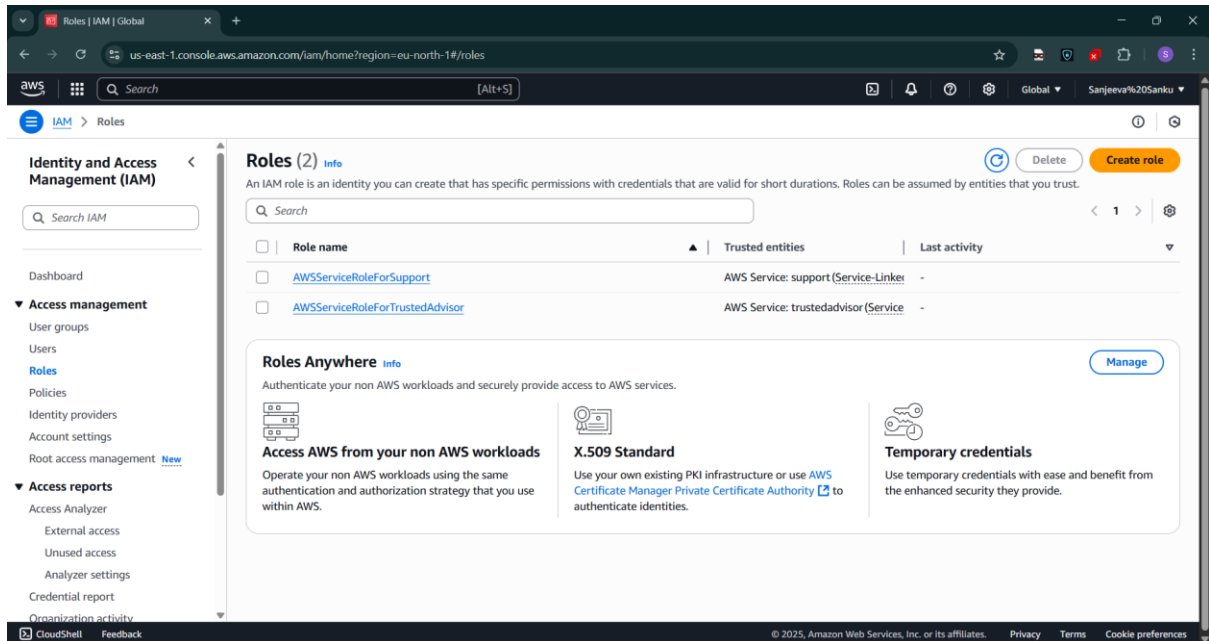


Update operation is also performed from the table

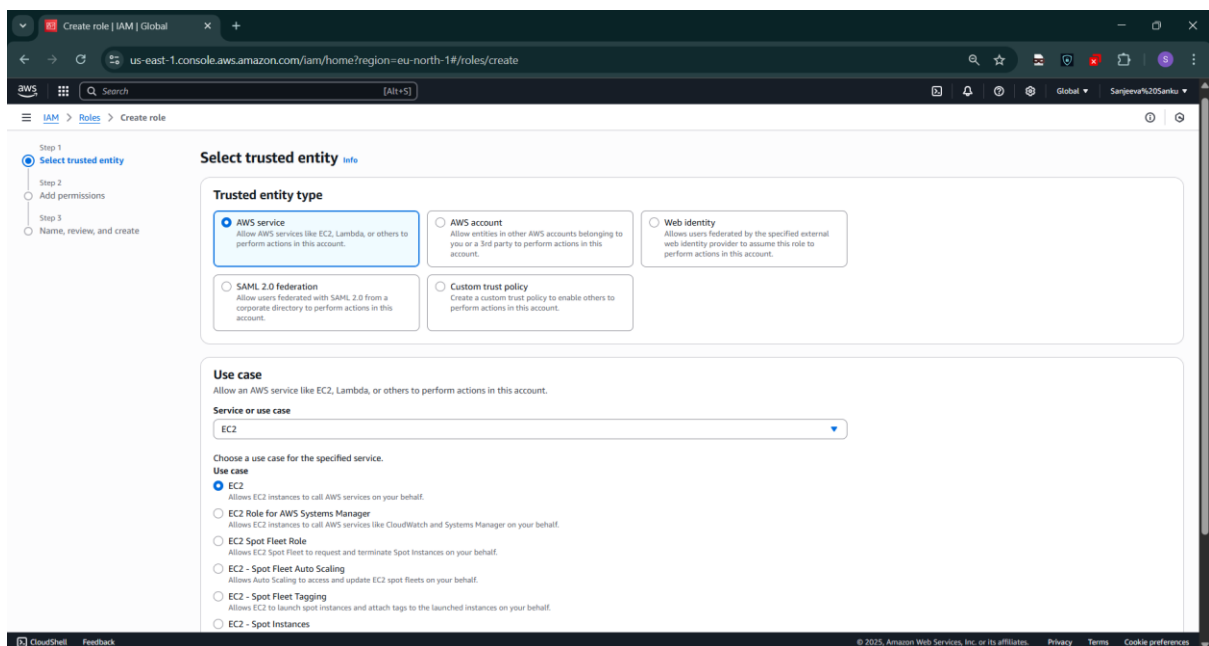


IAM ROLE

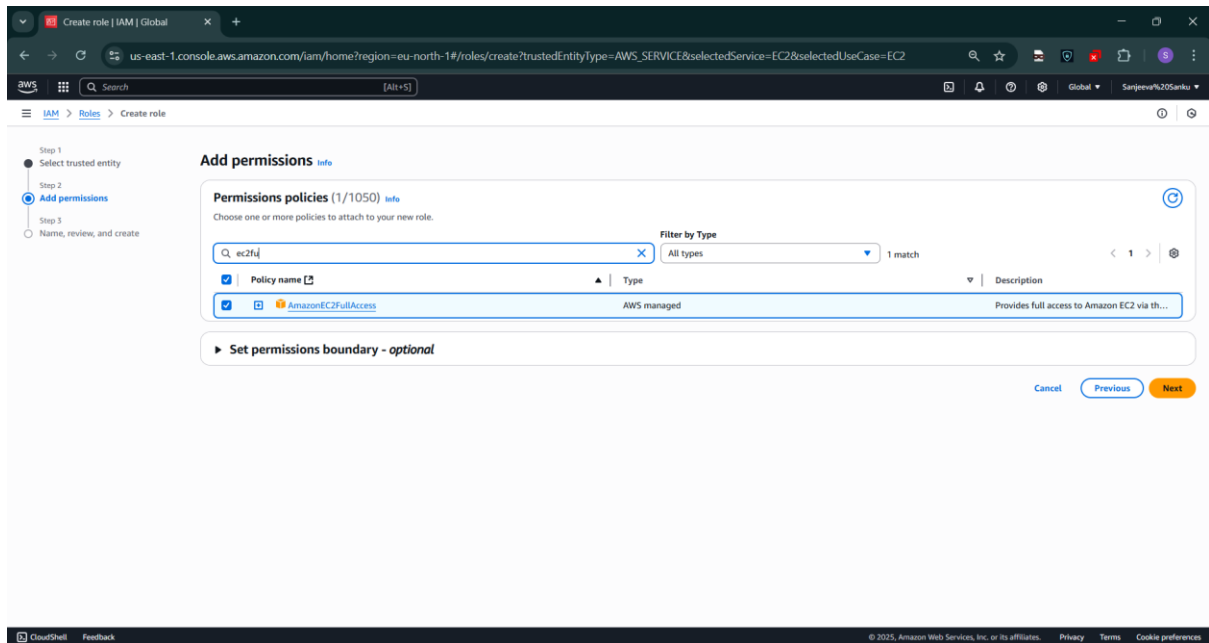
Create IAM ROLE



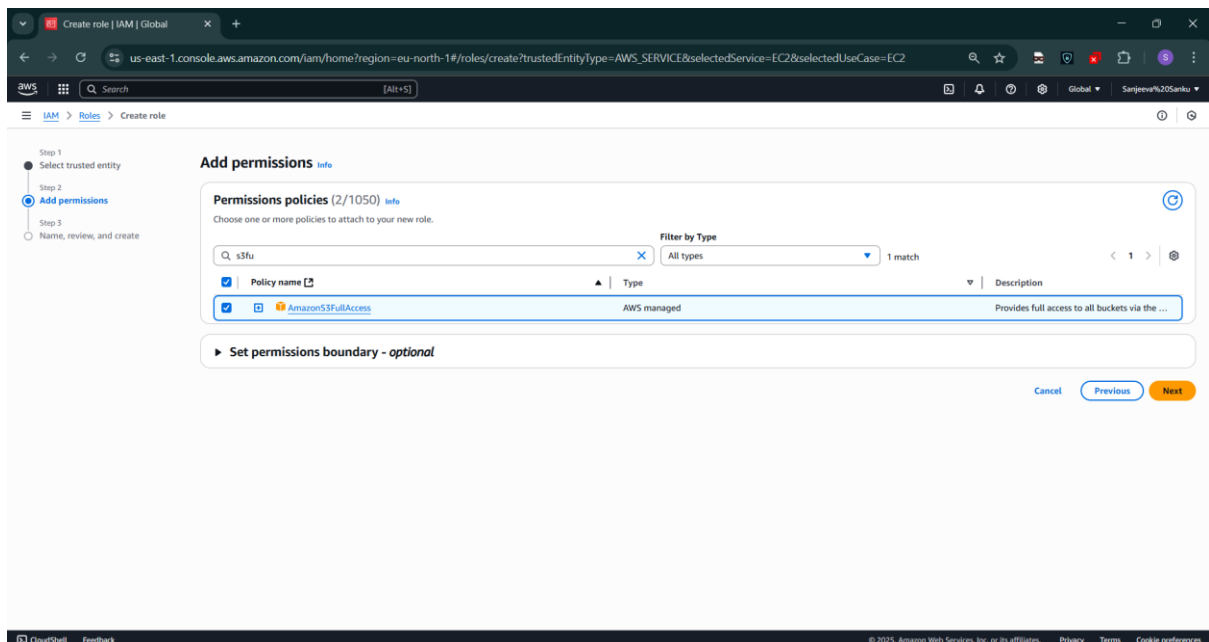
Provide EC2 Access for the role



Provide EC2 Full Access



Provide S3 Full Access



Give name to your role

The screenshot shows the AWS IAM console 'Create role' page. The browser address bar shows the URL: `us-east-1.console.aws.amazon.com/iam/home?region=eu-north-1#/roles/create?trustedEntityType=AWS_SERVICE&selectedService=EC2&selectedUseCase=EC2&policy...`. The page has a sidebar with 'IAM' and 'Roles' selected. The main content area is titled 'Name, review, and create' and shows 'Step 1: Select trusted entities'. The 'Role details' section has a 'Role name' field with the value 'ec2-s3-role' and a 'Description' field with the text 'Allows EC2 instances to call AWS services on your behalf.' The 'Trust policy' section shows a JSON policy document. The footer includes 'CloudShell', 'Feedback', and copyright information for Amazon Web Services, Inc.

Step 1: Select trusted entities

Role details

Role name
Enter a meaningful name to identify this role.

Maximum 64 characters. Use alphanumeric and '+', '@', '-' characters.

Description
Add a short explanation for this role.

Maximum 1000 characters. Use letters (A-Z and a-z), numbers (0-9), tabs, new lines, or any of the following characters: '_', '@', '/', '!', '#', '%', '&', '*'.

Trust policy

```
1 {  
2   "Version": "2012-10-17",  
3   "Statement": [  
4     {  
5       "Effect": "Allow",  
6       "Action": [  
7         "sts:AssumeRole"  
8       ],  
9       "Principal": {  
10        "Service": [  
11          "ec2.amazonaws.com"  
12        ]  
13      }  
14    ]  
15  }  
16 }
```

Role created successfully

The screenshot shows the AWS IAM console 'Roles' page. The browser address bar shows the URL: `us-east-1.console.aws.amazon.com/iam/home?region=eu-north-1#/roles`. The page has a sidebar with 'IAM' and 'Roles' selected. The main content area shows a green banner 'Role ec2-s3-role created.' and a table of roles. The 'Roles Anywhere' section is also visible. The footer includes 'CloudShell', 'Feedback', and copyright information for Amazon Web Services, Inc.

Role ec2-s3-role created.

Roles (3)

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

Role name	Trusted entities	Last activity
AWSServiceRoleForSupport	AWS Service: support (Service-Linker)	-
AWSServiceRoleForTrustedAdvisor	AWS Service: trustedadvisor (Service-Linker)	-
ec2-s3-role	AWS Service: ec2	-

Roles Anywhere

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

Access AWS from your non AWS workloads
Operate your non AWS workloads using the same authentication and authorization strategy that you use within AWS.

X.509 Standard
Use your own existing PKI infrastructure or use [AWS Certificate Manager Private Certificate Authority](#) to authenticate identities.

Temporary credentials
Use temporary credentials with ease and benefit from the enhanced security they provide.

us-east-1.console.aws.amazon.com/iam/home?region=eu-north-1#/roles/details/ec2-s3-role?section=permissions

ec2-s3-role

Allows EC2 instances to call AWS services on your behalf.

Summary

Creation date June 12, 2025, 11:14 (UTC+05:30)	ARN arn:aws:iam::391984502893:role/ec2-s3-role	Instance profile ARN arn:aws:iam::391984502893:instance-profile/ec2-s3-role
Last activity -	Maximum session duration 1 hour	

Permissions | Trust relationships | Tags | Last Accessed | Revoke sessions

Permissions policies (2)

You can attach up to 10 managed policies.

Policy name	Type	Attached entities
AmazonEC2FullAccess	AWS managed	1
AmazonS3FullAccess	AWS managed	1

Permissions boundary (not set)

Generate policy based on CloudTrail events

You can generate a new policy based on the access activity for this role, then customize, create, and attach it to this role. AWS uses your CloudTrail events to identify the services and actions used and generate a policy. [Learn more](#)

Create ec2 instance

eu-north-1.console.aws.amazon.com/ec2/home?region=eu-north-1#Instances:

Instances (1/1)

Last updated 1 minute ago

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 DNS	Public IPv4 ...	Elastic IP
sample-EC2	i-0d4da37acc895f637	Running	t3.micro	Initializing	View alarms +	eu-north-1b	ec2-51-20-1-92.eu-nort...	51.20.1.92	-

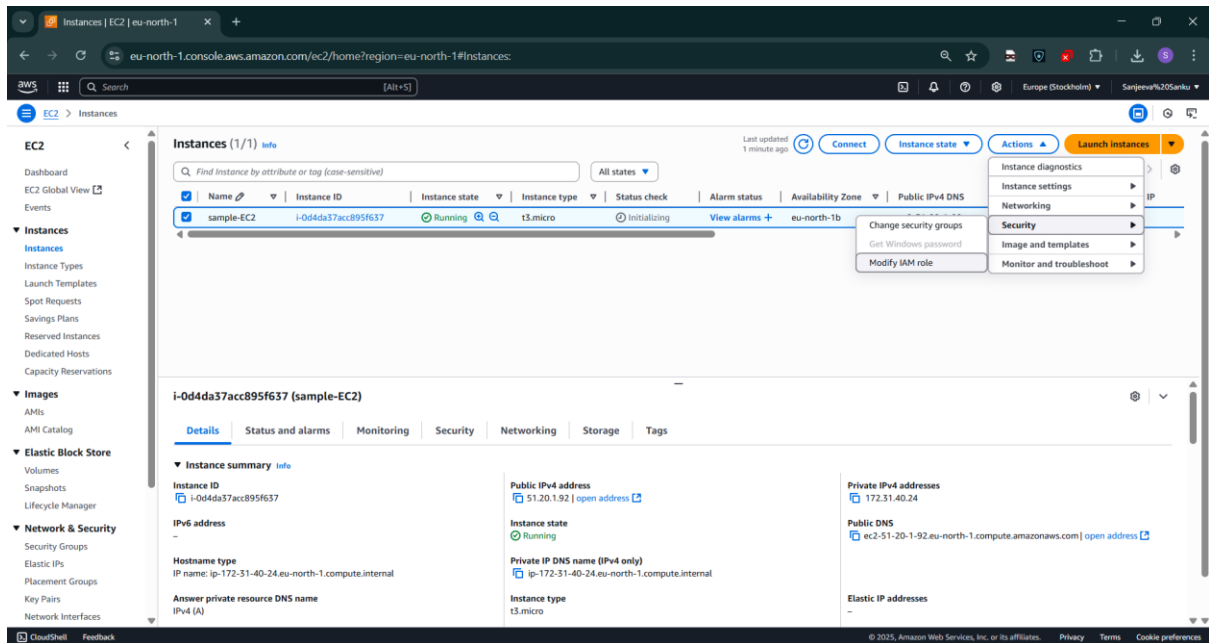
i-0d4da37acc895f637 (sample-EC2)

Details | Status and alarms | Monitoring | Security | Networking | Storage | Tags

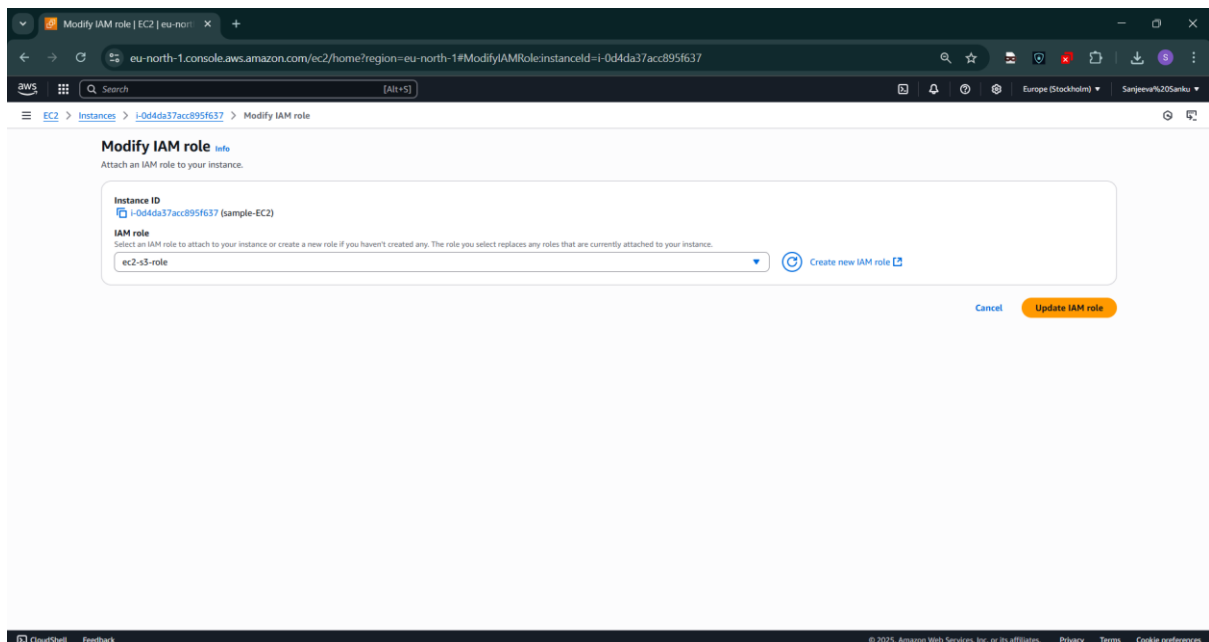
Instance summary

Instance ID i-0d4da37acc895f637	Public IPv4 address 51.20.1.92 open address	Private IPv4 addresses 172.31.40.24
IPv6 address -	Instance state Running	Public DNS ec2-51-20-1-92.eu-north-1.compute.amazonaws.com open address
Hostname type IP name: ip-172-31-40-24.eu-north-1.compute.internal	Private IP DNS name (IPv4 only) ip-172-31-40-24.eu-north-1.compute.internal	Elastic IP addresses -
Answer private resource DNS name IPv4 (A)	Instance type t3.micro	

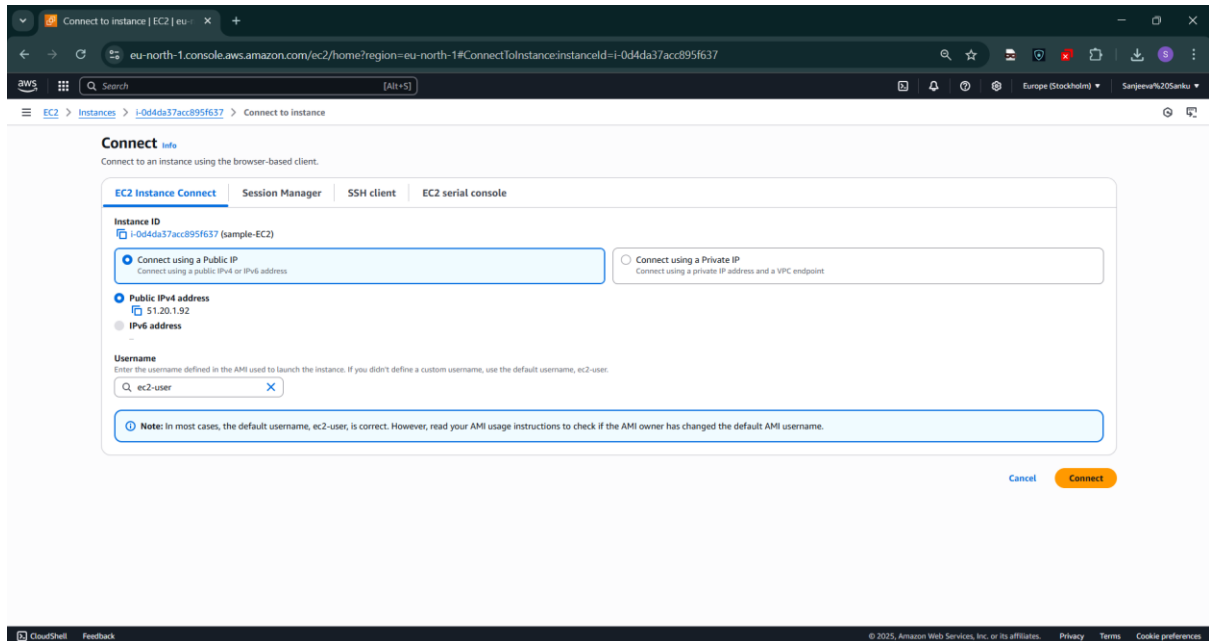
Now click on security and modify IAM role



Select the created IAM role

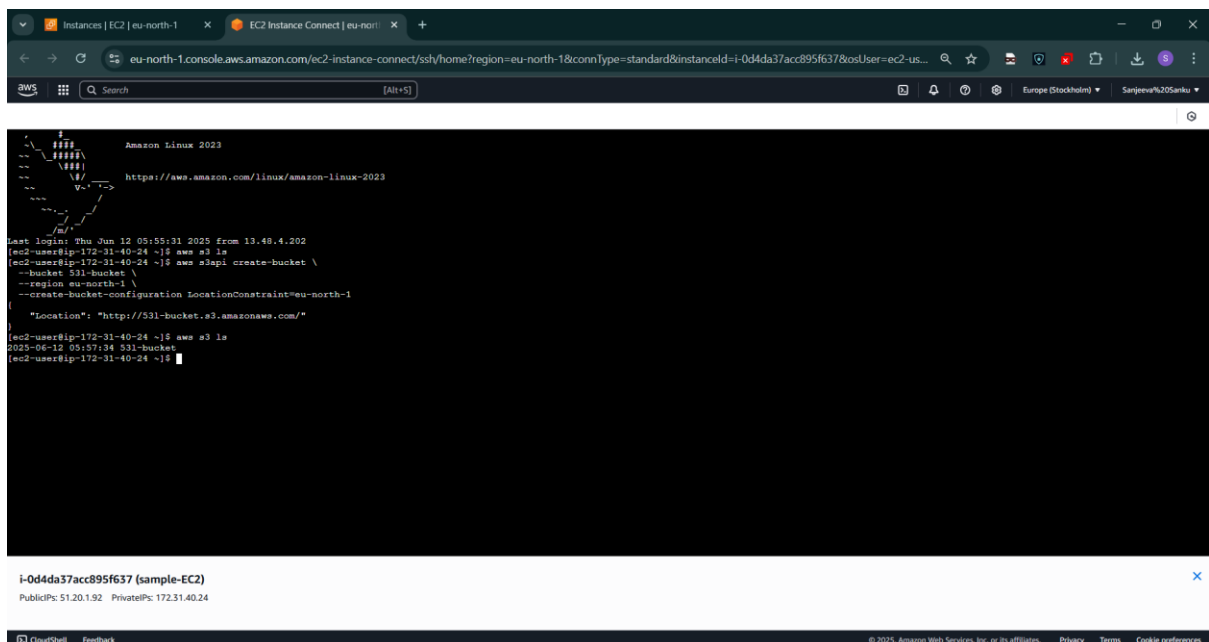


Directly connect to the instance

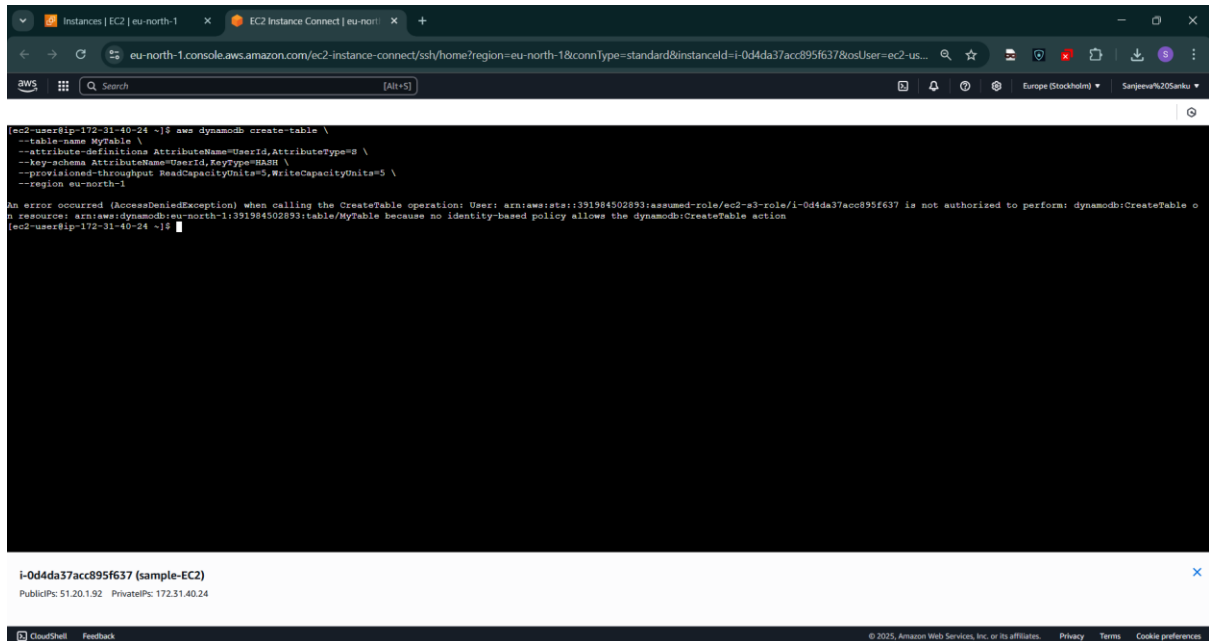


Creating a bucket named 53w-bucket

Bucket is created since we gave S3FullAccessPermission



When creating a DynamoDB it is access denied since we haven't set the role



```
[ec2-user@ip-172-31-40-24 ~]$ aws dynamodb create-table \
--table-name MyTable \
--attribute-definitions AttributeName=UserId,AttributeType=S \
--key-schema AttributeName=UserId,KeyType=HASH \
--provisioned-throughput ReadCapacityUnits=5,WriteCapacityUnits=5 \
--region eu-north-1

An error occurred (AccessDeniedException) when calling the CreateTable operation: User: arn:aws:sts:391984502893:assumed-role/ec2-s3-role/i-0d4da37acc895f637 is not authorized to perform: dynamodb:CreateTable on resource: arn:aws:dynamodb:eu-north-1:391984502893:table/MyTable because no identity-based policy allows the dynamodb:CreateTable action
[ec2-user@ip-172-31-40-24 ~]$
```

i-0d4da37acc895f637 (sample-EC2)
PublicIPs: 51.20.1.92 PrivateIPs: 172.31.40.24

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