

TASK 1: Set IAM User Account Password Requirements

Set password rules as follows:

- **Passwords must contain a minimum of 10 characters**
- **Passwords must have a mix of uppercase and lowercase letters, at least one number and a special character.**
- **Users must change passwords every month,**
- **Passwords cannot be reused.**
- **All new users must change their password on the first login. Provide a screenshot of these settings.**

Logged in to root account and set the account settings for password as below

Identity and Access Management (IAM)

Dashboard

Access management

User groups

Users

Roles

Policies

Identity providers

Account settings

Access reports

Access Analyzer

External access

Unused access

Account Settings

Account settings Info

Password policy Info

[Edit](#)

Configure the password requirements for the IAM users.

This AWS account uses the following custom password policy:

Password minimum length

10 characters

Password strength

- Require at least one uppercase letter from the Latin alphabet (A-Z)
- Require at least one lowercase letter from the Latin alphabet (a-z)
- Require at least one number
- Require at least one non-alphanumeric character

Other requirements

- Password expires in 30 day(s)
- Allow users to change their own password
- Prevent password reuse from the past 1 changes

https://us-east-1.console.aws.amazon.com/iam/home?region=eu-north-1#/users/create

Services Search [Alt+S]

and create

re password

User name

task1user

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*

If you're providing console access to a person, it's a [best practice](#) to manage their access in IAM Identity Center.

Are you providing console access to a person?

User type

☐ Specify a user in Identity Center - Recommended

We recommend that you use Identity Center to provide console access to a person. With Identity Center, you can centrally manage user access to their AWS accounts and cloud applications.

☒ I want to create an IAM user

We recommend that you create IAM users only if you need to enable programmatic access through access keys, service-specific credentials for AWS CodeCommit or Amazon Keyspaces, or a backup credential for emergency account access.

Console password

☒ Autogenerated password

You can view the password after you create the user.

☐ Custom password

Enter a custom password for the user.

☐ 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 must create them after you create this IAM user.

TASK 2:

Create Administration Users (with full Admin permissions)

Create two users with full administration permissions on your cloud infrastructure but without access to financial and payment details. Place these users in a group that gives them the required permissions

Created 2 users task2_1 and task2_2 and gave them full admin access except Billing and payments. You can see that access is denied to them through the console.

Identity and Access Management (IAM)

Task2Group

Summary

User group name: Task2Group, Creation time: February 13, 2024, 11:40 (UTC), ARN: arn:aws:iam::668527998546:group/Task2Group

Permissions policies (1)

Policy name	Type	Attached entities
FullAdminWithoutBillingAndPayments	Customer inline	0

FullAdminWithoutBillingAndPayments

```
1 {
2   "Version": "2012-10-17",
3   "Statement": [
4     {
5       "Sid": "VisualEditor0",
6       "Effect": "Allow",
7       "Action": "*",
8       "Resource": "*"
9     },
10    {
11      "Sid": "VisualEditor1",
12      "Effect": "Deny",
13      "Action": [
14        "billing:*",
15        "payments:*"
16      ],
17      "Resource": "*"
18    }
19  ]
20 }
```

AWS Billing > Bills

You Need Permissions

You don't have permission to access billing information for this account. Contact your AWS administrator if you need help. If you are an AWS administrator, you can provide permissions for your users or groups by making sure that (1) [this account allows IAM and federated users to access billing information](#) and (2) [you have the required IAM permissions](#).

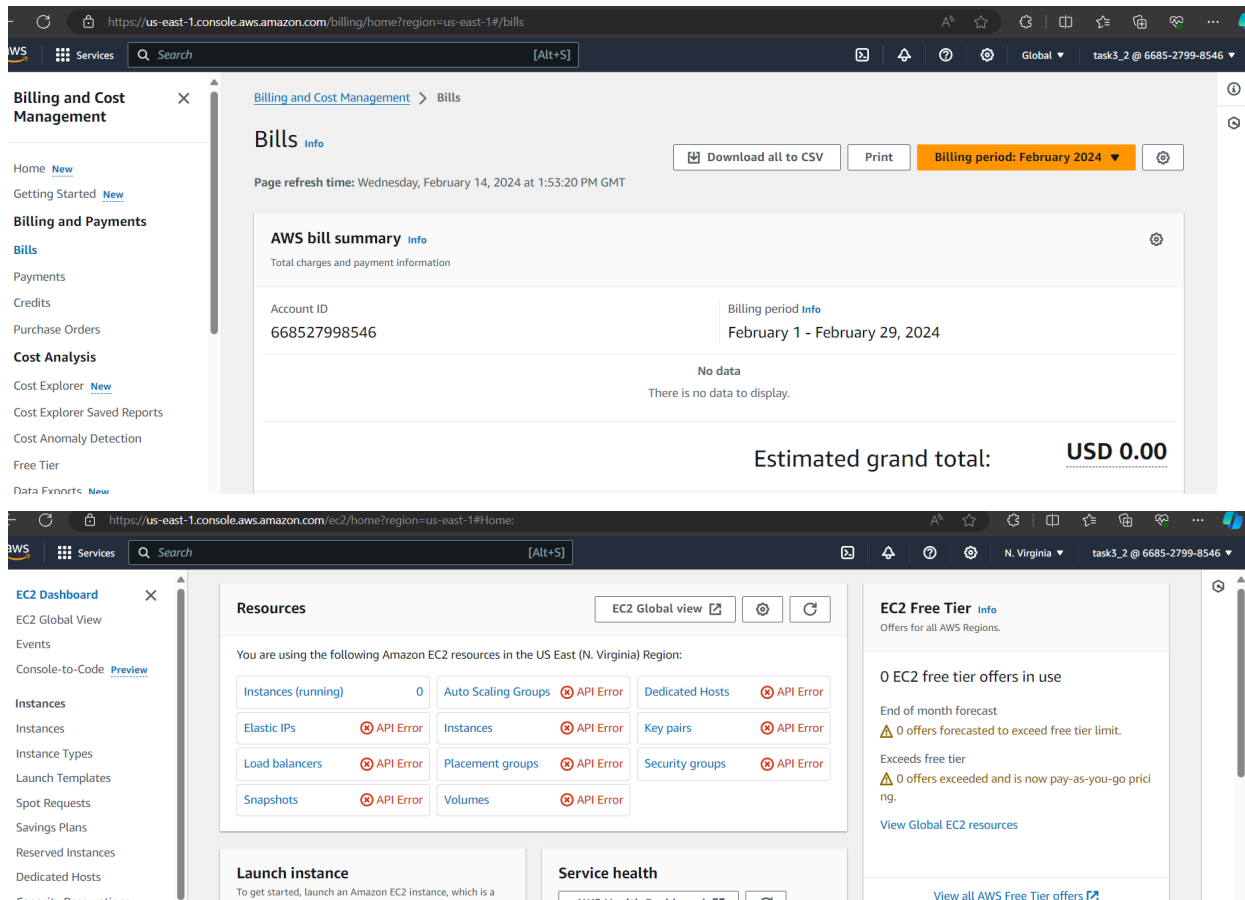
TASK 3:

Create two users who do have access to financial and payment details. Place these users in a finance group which gives them the required permissions. These users should not have access to other features.

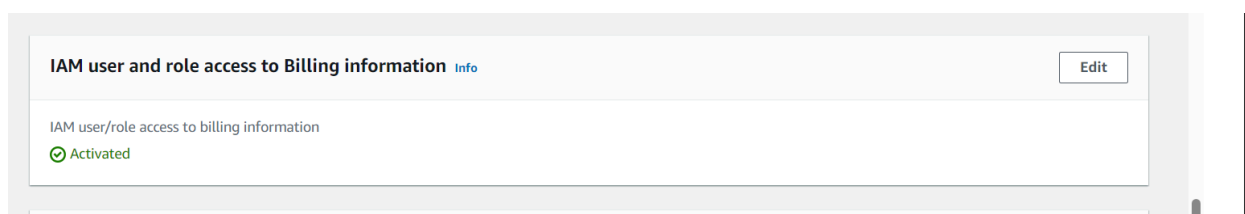
Created FinanceGroup with 2 users who have access to only Billing policy. You can see access is denied to other services on the console.

The screenshot displays the AWS IAM console interface for the 'FinanceGroup'. The left sidebar shows the navigation menu with 'User groups' selected. The main content area is titled 'FinanceGroup' and includes a 'Summary' section with details like 'User group name: FinanceGroup', 'Creation time: February 13, 2024, 14:15 (UTC)', and 'ARN: arn:aws:iam::668527998546:group/FinanceGroup'. Below this, the 'Permissions' tab is active, showing 'Permissions policies (1)'. A table lists the attached policy: 'Billing', which is an 'AWS managed - job function' policy. The table has columns for 'Policy name', 'Type', and 'Attached entities'. The 'Billing' policy is listed with a checkbox, a lock icon, and a link to the policy details.

Policy name	Type	Attached entities
<input type="checkbox"/> Billing	AWS managed - job function	2



This option in the root user needs to be enabled to give IAM users billing access



TASK 4:

Create two users who each have access to one or two services only. Demonstrate how to do the above using the command-line interface

Created admin users user1 and user2 through CLI with access to S3 and EC2 services respectively

```
Windows PowerShell
PS C:\Users\praty> aws iam create-user --user-name user1
{
  "User": {
    "Path": "/",
    "UserName": "user1",
    "UserId": "AIDAZXJ27WZJB2TFNWA32",
    "Arn": "arn:aws:iam::668527998546:user/user1",
    "CreateDate": "2024-02-15T22:51:12+00:00"
  }
}
PS C:\Users\praty> aws iam create-user --user-name user2
{
  "User": {
    "Path": "/",
    "UserName": "user2",
    "UserId": "AIDAZXJ27WZJM37J5VC26",
    "Arn": "arn:aws:iam::668527998546:user/user2",
    "CreateDate": "2024-02-15T22:51:22+00:00"
  }
}
PS C:\Users\praty> cat <<EOT >> user1-s3-policy.json

Windows PowerShell
PS C:\Users\praty> aws iam attach-user-policy --user-name user1 --policy-arn arn:aws:iam::aws:policy/AmazonS3FullAccess
PS C:\Users\praty> aws iam attach-user-policy --user-name user2 --policy-arn arn:aws:iam::aws:policy/AmazonEC2FullAccess
PS C:\Users\praty> aw

PS C:\Users\praty> aws iam list-attached-user-policies --user-name user1
{
  "AttachedPolicies": [
    {
      "PolicyName": "AmazonS3FullAccess",
      "PolicyArn": "arn:aws:iam::aws:policy/AmazonS3FullAccess"
    }
  ]
}
PS C:\Users\praty> aws iam list-attached-user-policies --user-name user2
{
  "AttachedPolicies": [
    {
      "PolicyName": "AmazonEC2FullAccess",
      "PolicyArn": "arn:aws:iam::aws:policy/AmazonEC2FullAccess"
    }
  ]
}
PS C:\Users\praty>
```

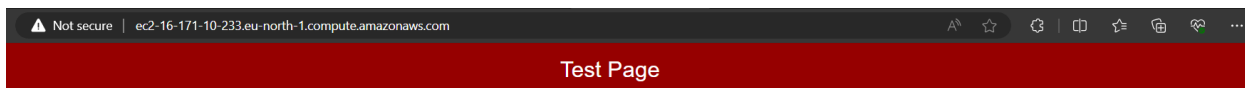
TASK 5:

Log in as one of the administration users and "spin up" a virtual server with Linux preinstalled. Allow access to the website from any IP address. Limit admin (SSH) access to three specific IP addresses
Take a snapshot of your server and store it in a location designed for long-term storage with infrequent access.

Installed and started Apache web server

```
[root@ip-172-31-33-229 ec2-user]# yum install -y httpd
Loaded plugins: extras_suggestions, langpacks, priorities, update-motd
Resolving Dependencies
--> Running transaction check
--> Package httpd.x86_64 0:2.4.58-1.amzn2 will be installed
```

```
[root@ip-172-31-33-229 ec2-user]# sudo service httpd start
Redirecting to /bin/systemctl start httpd.service
[root@ip-172-31-33-229 ec2-user]#
```



This page is used to test the proper operation of the Apache HTTP server after it has been installed. If you can read this page, it means that the Apache HTTP server installed at this site is working properly.

You are a member of the general public:

The fact that you are seeing this page indicates that the website you just visited is either experiencing problems, or is undergoing routine maintenance.

If you would like to let the administrators of this website know that you've seen this page instead of the page you expected, you should send them e-mail. In general, mail sent to the name "webmaster" and directed to the website's domain should reach the appropriate person.

For example, if you experienced problems while visiting www.example.com, you should send e-mail to "webmaster@example.com".

If you are the website administrator:

You may now add content to the directory `/var/www/html/`. Note that until you do so, people visiting your website will see this page, and not your content. To prevent this page from ever being used, follow the instructions in the file `/etc/httpd/conf.d/welcome.conf`.

You are free to use the image below on web sites powered by the Apache HTTP Server:



Limiting IPs through security group

Inbound rules (5)

🔄

Manage tags

Edit inbound rules

🔍 Search

< 1 >

⚙

Security group rule... ▾	IP version ▾	Type ▾	Protocol ▾	Port range ▾	Source
sgr-06ade760788a824...	IPv4	SSH	TCP	22	192.168.1.166/32
sgr-04e399942b35f6d...	IPv4	SSH	TCP	22	192.168.1.84/32
sgr-0774fe031d6fb0c00	IPv4	SSH	TCP	22	192.168.1.60/32
sgr-0fa7659e8596b0e49	IPv4	HTTP	TCP	80	0.0.0.0/0
sgr-0914902a3d09b1...	IPv4	HTTPS	TCP	443	0.0.0.0/0

S3 Archival :

https://us-east-1.console.aws.amazon.com/iamv2/home?region=eu-north-1#/roles/details/EC2AccessToS3ForSnapshots?section=permissions

Services Search [Alt+S] Global dev

EC2AccessToS3ForSnapshots Info Delete

Allows EC2 instances to call AWS services on your behalf.

Summary Edit

Creation date February 16, 2024, 13:33 (UTC)	ARN arn:aws:iam::668527998546:role/EC2AccessToS3ForSnapshots	Instance profile ARN arn:aws:iam::668527998546:instance-profile/EC2AccessToS3ForSnapshots
Last activity -	Maximum session duration 1 hour	

[Permissions](#) | [Trust relationships](#) | [Tags](#) | [Access Advisor](#) | [Revoke sessions](#)

Permissions policies (1) Info

You can attach up to 10 managed policies.

Filter by Type
All types

<input type="checkbox"/>	Policy name	Type	Attached entities
<input type="checkbox"/>	AmazonS3FullAccess	AWS managed	2

Instances (1 of 1)

Any state

<input checked="" type="checkbox"/>	Name	Instance ID	Instance state	Instance type	Status check
<input checked="" type="checkbox"/>	Linux Webserver	i-040a97d5a4f8523ae	Stopped	t3.micro	-

Instance: i-040a97d5a4f8523ae (Linux Webserver)

[Details](#) | [Status and alarms New](#) | [Monitoring](#) | [Security](#) | [Networking](#) | [Storage](#) | [Tags](#)

Change security groups

Get Windows password

Modify IAM role

Connect

View details

Manage instance state

Instance settings

Networking

Security

Image and templates


Monitor and troubleshoot

EC2 > Instances > i-040a97d5a4f8523ae > Modify IAM role

Modify IAM role Info

Attach an IAM role to your instance.



Instance ID

 i-040a97d5a4f8523ae (Linux Webserver)

IAM role

Select an IAM role to attach to your instance or create a new role if you haven't created any. The role you select replaces any roles that are currently attached to your instance.

EC2AccessToS3ForSnapshots ▼

 [Create new IAM role](#) 

Cancel

Update IAM role

Copy snapshot to S3 from CLI

```
PS C:\Users\praty> aws ec2 copy-snapshot --source-region eu-north-1 --source-snapshot-id snap-8a35c5762df62a078 --destination-region eu-north-1
{
  "SnapshotId": "snap-091ef549bde4df11c"
}
```

The final copy of the snapshot is stored in S3 by AWS but it is not accessible through the console.

Another option is Archive option through AWS console:


snap-01c5f3f740406bb06	8 GiB	Standard	Completed	202
------------------------	-------	----------	-----------	-----

Archive snapshot

Archiving might lead to higher storage costs than storing snapshots in standard tier

Archiving a snapshot stores a full copy of the snapshot in the archive tier. Archiving is recommended for monthly, quarterly, or yearly snapshots. Archiving daily incremental snapshots of a single volume could lead to higher costs when compared to storing them in the standard tier.

Are you sure that you want to archive the following snapshot?

 snap-01c5f3f740406bb06

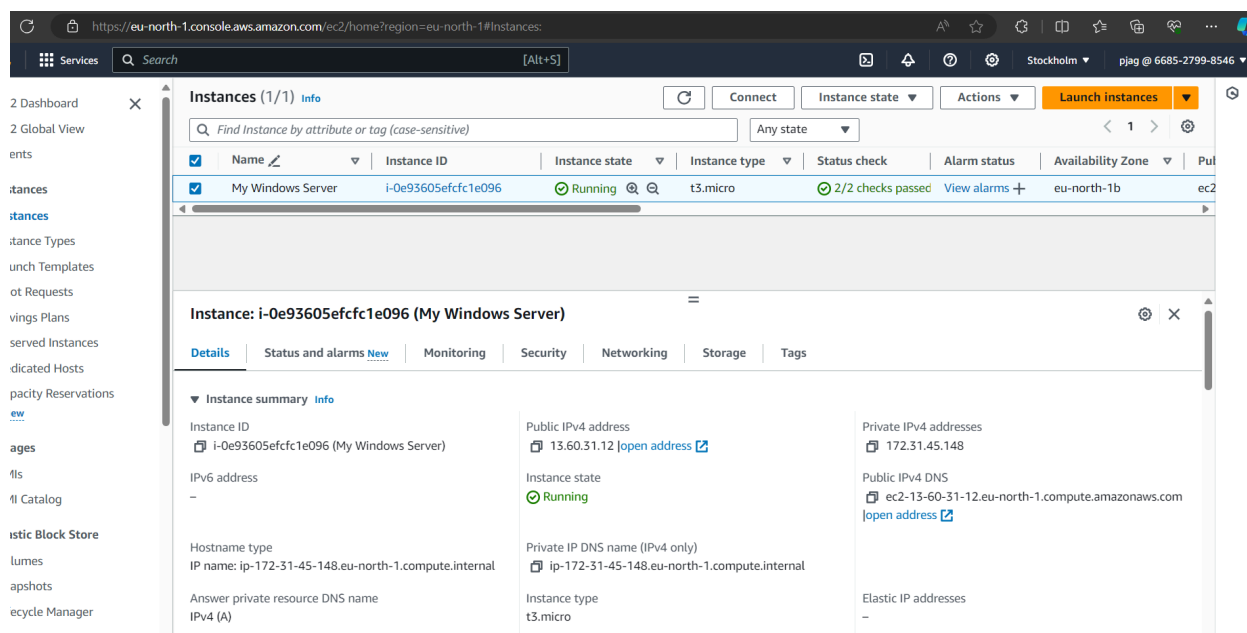
Cancel

Archive snapshot

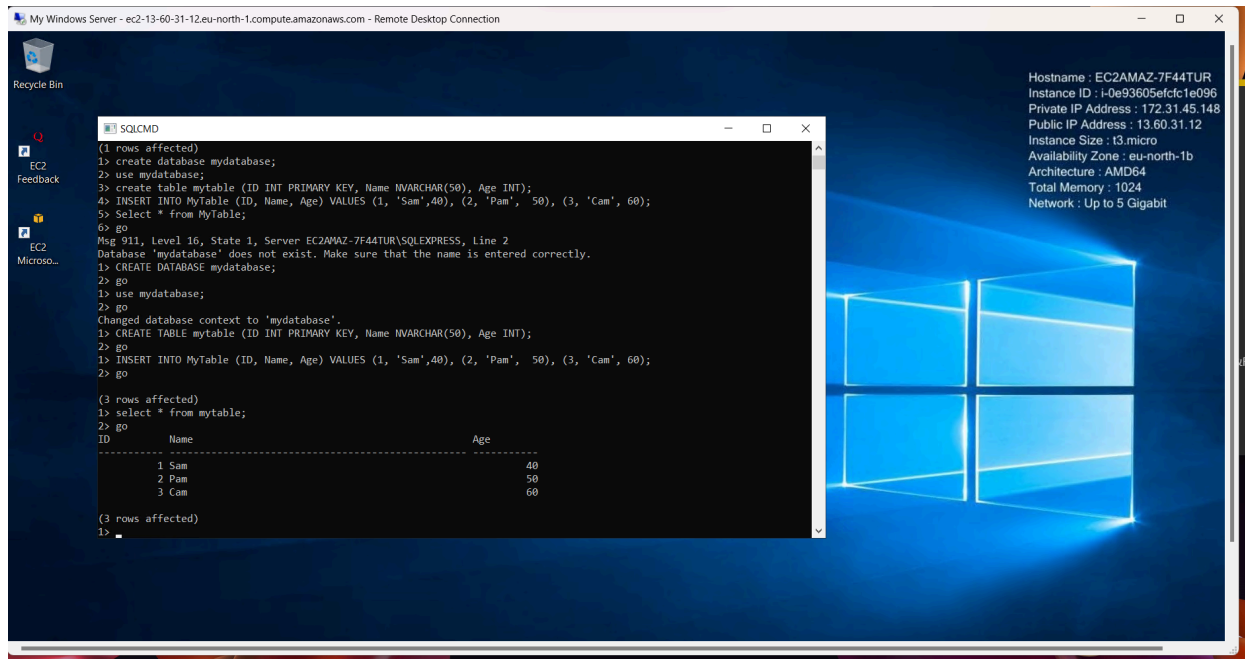
TASK 6:

Logged in as one of the administration users "spin up" a virtual server with Windows Server preinstalled. When this server is ready, install a free version of the SQL Server RDBMS. Remotely access the server using Windows Remote Desktop, create a database with one table, and enter some data. Configure your infrastructure to back up your database daily. Store your backups in S3

Created a Windows server with EC2 and RDP into that instance



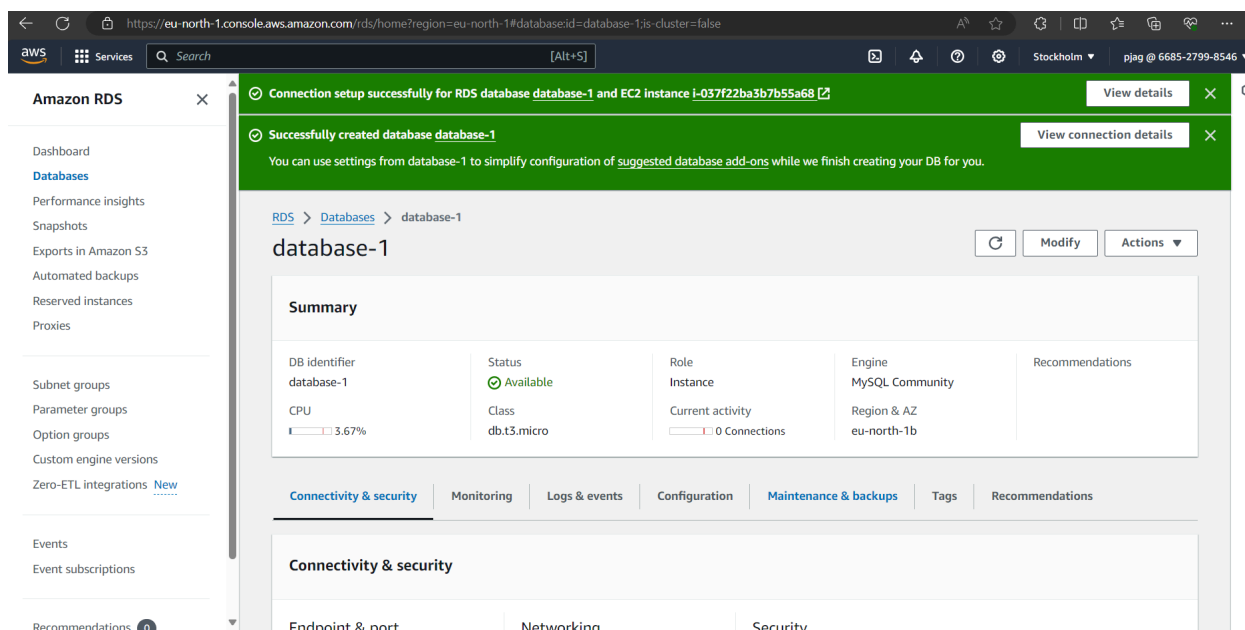
Used the SQL Server command line to create a table with 3 rows.



TASK 7:

Set up a MySQL or similar database using a managed service. Create a table and store some data in the database.

Use managed services to create database-1 with MariaDB

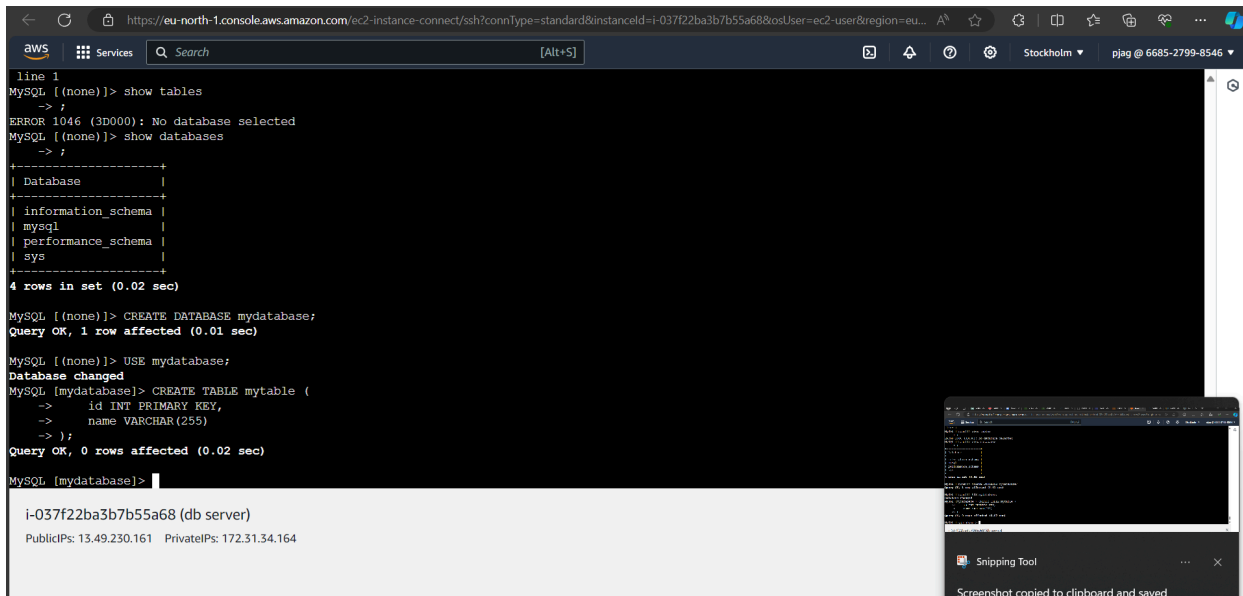


```
[root@ip-172-31-34-164 ec2-user]# mysql -u admin -p -h database-1.cdnxuyo5t0qt.eu-north-1.rds.amazonaws.com
Enter password:
Welcome to the MariaDB monitor.  Commands end with ; or \g.
Your MySQL connection id is 30
Server version: 8.0.35 Source distribution

Copyright (c) 2000, 2018, Oracle, MariaDB Corporation Ab and others.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.
```

Create a table and store sample data



```
line 1
MySQL [(none)]> show tables
->
ERROR 1046 (3D000): No database selected
MySQL [(none)]> show databases
->
+-----+
| Database |
+-----+
| information_schema |
| mysql |
| performance_schema |
| sys |
+-----+
4 rows in set (0.02 sec)

MySQL [(none)]> CREATE DATABASE mydatabase;
Query OK, 1 row affected (0.01 sec)

MySQL [(none)]> USE mydatabase;
Database changed
MySQL [mydatabase]> CREATE TABLE mytable (
->   id INT PRIMARY KEY,
->   name VARCHAR(255)
-> );
Query OK, 0 rows affected (0.02 sec)

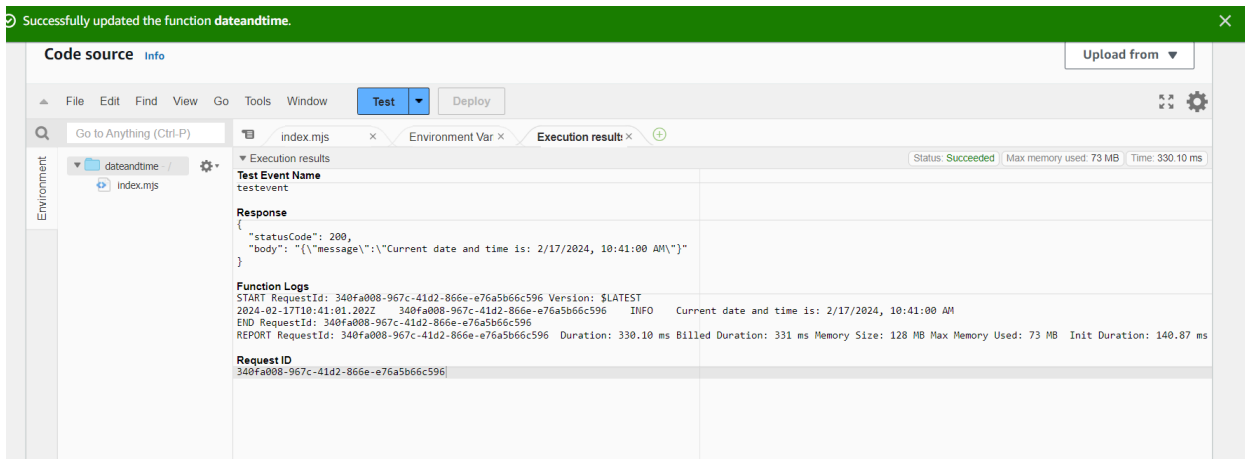
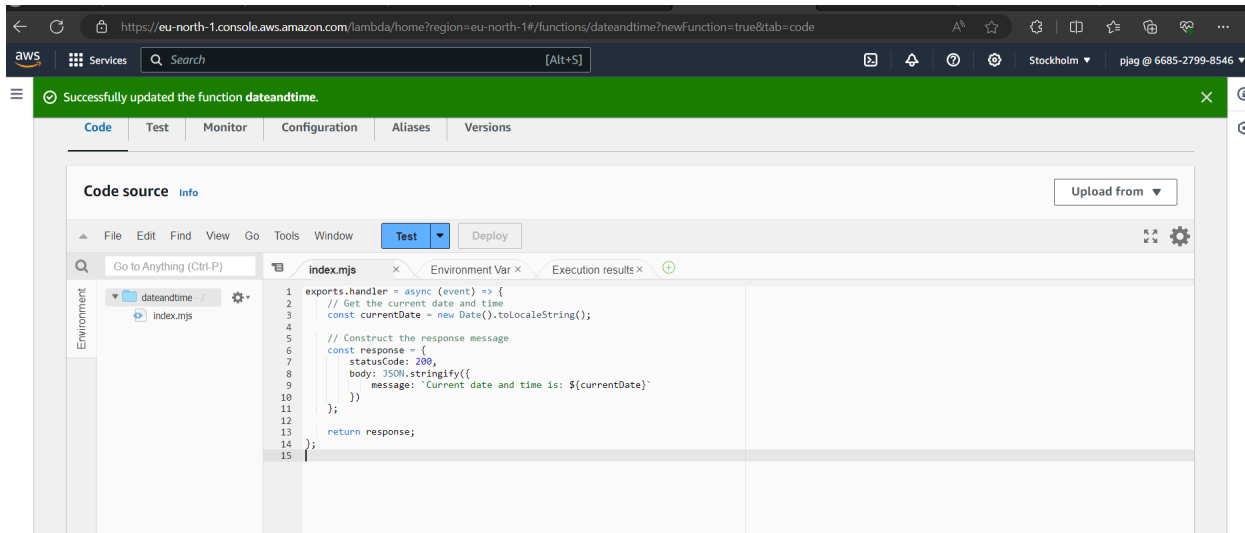
MySQL [mydatabase]>

i-037f22ba3b7b55a68 (db server)
PublicIPs: 13.49.230.161 PrivateIPs: 172.31.34.164
```

TASK 9:

Use Serverless computing functions such as AWS Lambda to return a message showing the current date and time.

Create a lambda function and add javascript code to display current date and time



Invoked the lambda function from my local AWS CLI and the output was written to a file output.txt

```
PS C:\Users\praty> aws lambda invoke --function-name dateandtime output.txt
{
  "StatusCode": 200,
  "ExecutedVersion": "$LATEST"
}
PS C:\Users\praty>
```

```
output  classnotes  TASKS  k8  bdaylist  Keeping your AWS
File  Edit  View





{"statusCode":200,"body":{"message\":"Current date and time is: 2/17/2024, 10:43:29 AM\"}}
```

TASK 11:

Create an organization to manage several accounts with your chosen cloud services. You can collaborate with other students to achieve this or you can create multiple accounts.

Created a policy with ability to Create and describe Organizations. Apply these policies to Admin user

Policy OrgFullAccess created.

<input type="checkbox"/>	 AmazonS3ReadOnlyAccess	AWS managed	Directly
<input type="checkbox"/>	 AWSCodeCommitPowerUser	AWS managed	Directly
<input type="checkbox"/>	 AWSOrganizationsFullAccess	AWS managed	Directly
<input type="checkbox"/>	 OrgFullAccess	Customer inline	Inline



OrgFullAccess

Copy JSON

Edit

```
17     "organizations:LeaveOrganization",
18     "organizations:ListHandshakesForAccount",
19     "organizations:ListAccounts",
20     "organizations:EnableAWSServiceAccess",
21     "organizations:ListCreateAccountStatus",
22     "organizations:DescribeResourcePolicy",
23     "organizations:DescribeOrganization",
24     "organizations:CreateGovCloudAccount",
25     "organizations:EnableAllFeatures",
26     "organizations:CreatePolicy",
27     "organizations:DescribeCreateAccountStatus",
28     "organizations:CreateOrganization"
29   ],
30   "Resource": "*"
31 },
32 {
33   "Sid": "VisualEditor1",
34   "Effect": "Allow",
35   "Action": "organizations:*",
36   "Resource": [
37     "arn:aws:organizations::666677777777:account/*/*/*"
```

► Permissions boundary (not set)

<input type="checkbox"/>	 AWSOrganizationsFullAccess	AWS managed	Directly
<input type="checkbox"/>	 OrgFullAccess	Customer inline	Inline

AWS Organizations ×

AWS accounts

Invitations
Services
Policies
Settings **New**
Get started

Organization ID
o-fprl8jqy3

AWS accounts

[Add an AWS account](#)

The accounts listed below are members of your organization. The organization's management account is responsible for paying the bills for all accounts in the organization. You can use the tools provided by AWS Organizations to centrally manage these accounts. [Learn more](#)

Organization

Organizational units (OUs) enable you to group several accounts together and administer them as a single unit instead of one at a time.

Search by name, email, account ID or OU ID.

Organizational structure

Account created/joined

▼ ☒ **Root**
r-ktak

☐ **devops** **management account**
668527998546 | pratyushaj2019@gmail.com
Joined 2024/02/12

☐ **OrgAct1**
058264538780 | pratyushaj2019+org1@gmail.com
Created 2024/02/17

☐ **OrgAct2**
975050014882 | pratyushaj2019+org2@gmail.com
Created 2024/02/18

Actions

Organizational unit

- Create new
- Rename
- Delete

AWS account

- Move
- Close
- Remove from organization
- Export account list

AWS Organizations ×

AWS accounts

Invitations
Services
Policies
Settings **New**
Get started

Organization ID
o-fprl8jqy3

Organizational structure

Account created/joined date

▼ ☐ **Root**
r-ktak

▼ ☐ **MyOrganization**
ou-ktak-thjjaegm

▼ ☐ **Finance**
ou-ktak-xi2yb3ac

☐ **OrgAct1**
058264538780 | pratyushaj2019+org1@gmail.com
Created 2024/02/17

☐ **OrgAct2**
975050014882 | pratyushaj2019+org2@gmail.com
Created 2024/02/18

▶ ☐ **IT**
ou-ktak-1xakmo4m

▶ ☐ **Marketing**
ou-ktak-1woryg59

☐ **devops** **management account**
668527998546 | pratyushaj2019@gmail.com
Joined 2024/02/12

TASK 15:

Create a demonstration of Speech to Text services in AWS.

Upload a sample audio file to S3 bucket

Services Search [Alt+S]

Amazon S3 > Buckets > pratyusha.backup.bucket

pratyusha.backup.bucket [Info](#)

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

Objects (1) [Info](#) [Refresh](#) [Copy S3 URI](#) [Copy URL](#) [Download](#) [Open](#) [Delete](#)

Objects are the fundamental entities stored in Amazon S3. You can use [Amazon S3 inventory](#) to get a list of all objects in your bucket. For others to access your objects, you'll need to create an access point.

<input type="checkbox"/>	Name	Type	Last modified	Size
<input type="checkbox"/>	awstranscribe.mp3	mp3	February 19, 2024, 08:24:39 (UTC+00:00)	

Input data [Info](#)

Input file location on S3
Specify an input audio or video file in Amazon S3.

S3 URI

[View](#) [Browse S3](#)

Format: s3://bucket/prefix/file.extension.

Valid file formats: MP3, MP4, WAV, FLAC, AMR, OGG and WebM.

Use Amazon Transcribe service to create a transcription job and link the S3 sample audio

Amazon Transcribe > Transcription jobs

Transcription jobs (1) [Info](#)

[Download](#) [Copy](#) [Delete](#) [Create job](#)

[Status: All](#) [1](#) [Settings](#)

	Name	Status	Language	Language settings	Model type	Model name	Created
<input type="radio"/>	DemoTranscription	Complete	English, US (en-US)	Specific language	General	-	February 19 2024, 08:29

Transcription generated

Transcription preview

Select download to save a local copy of the transcription.

Download

TextAudio identificationSubtitlesToxicity detection - new

I'm trying to test Aws transcribe service. This is my demonstration audio. I'm going to use this for my Aws Cloud skills project. Let's see if this works. And let's see if Aws transcribe can understand my accent.

Testing Amazon Transcribe in Telugu language

Transcription jobs (1) Info

DownloadCopyDeleteCreate job

Find job namesStatus: All

	Name	Status	Language	Language settings	Model type	Model name	Created
	Telugu	Complete	Telugu, IN (te-IN)	Automatic language identification	General	-	February 19 2024, 08:35 (

It did a good job of transcribing a small Telugu language audio clip apart from making one mistake. The audio translates to - Let us see if you can recognize and understand my language AWS.

Transcription preview

Select download to save a local copy of the transcription.

Download

TextAudio identificationSubtitlesToxicity detection - new

నీకు నా భాష అర్థం అవుతుందో లేదో చూద్దాం. tablets చూద్దాం.