STEP 1:
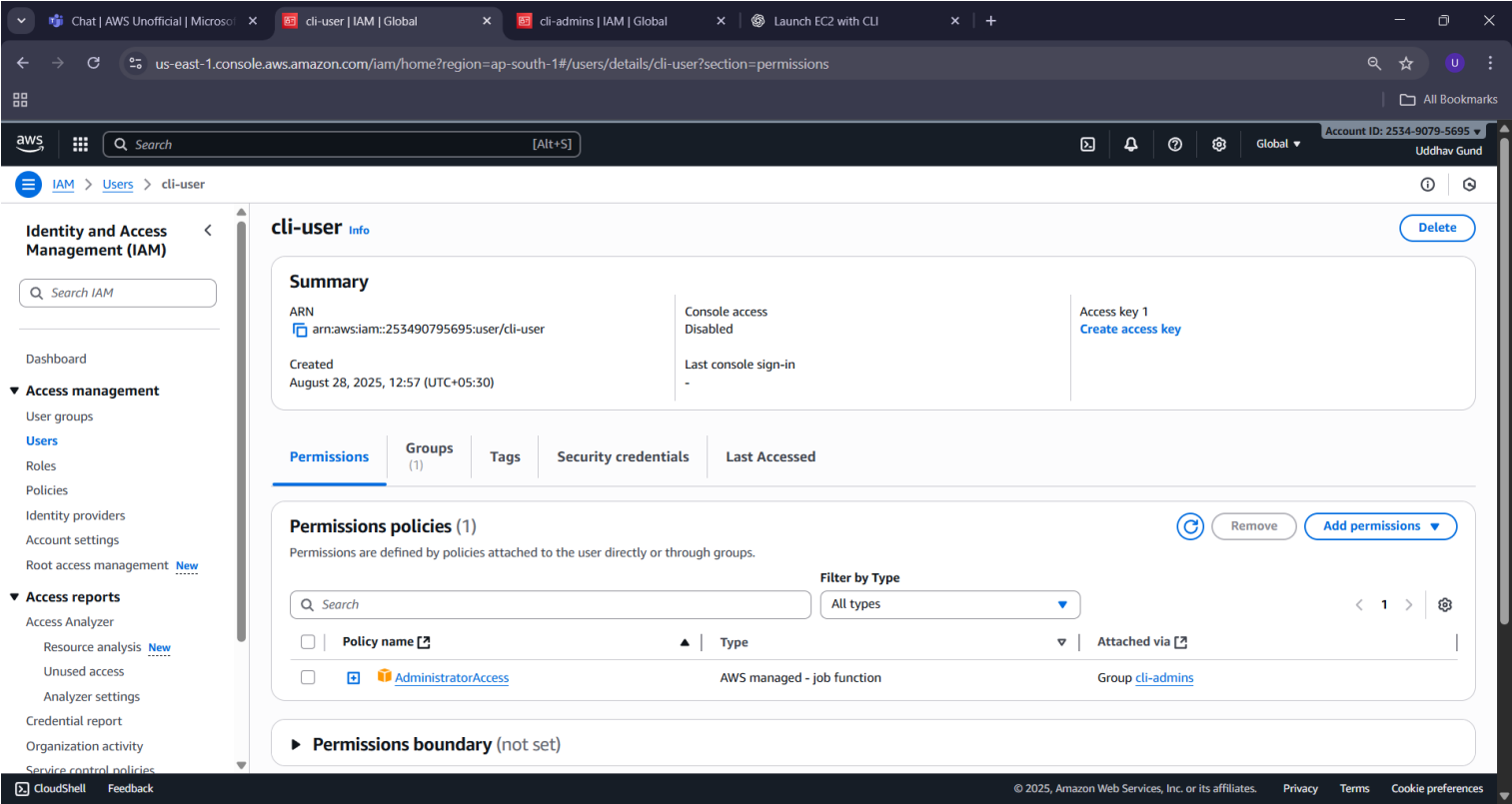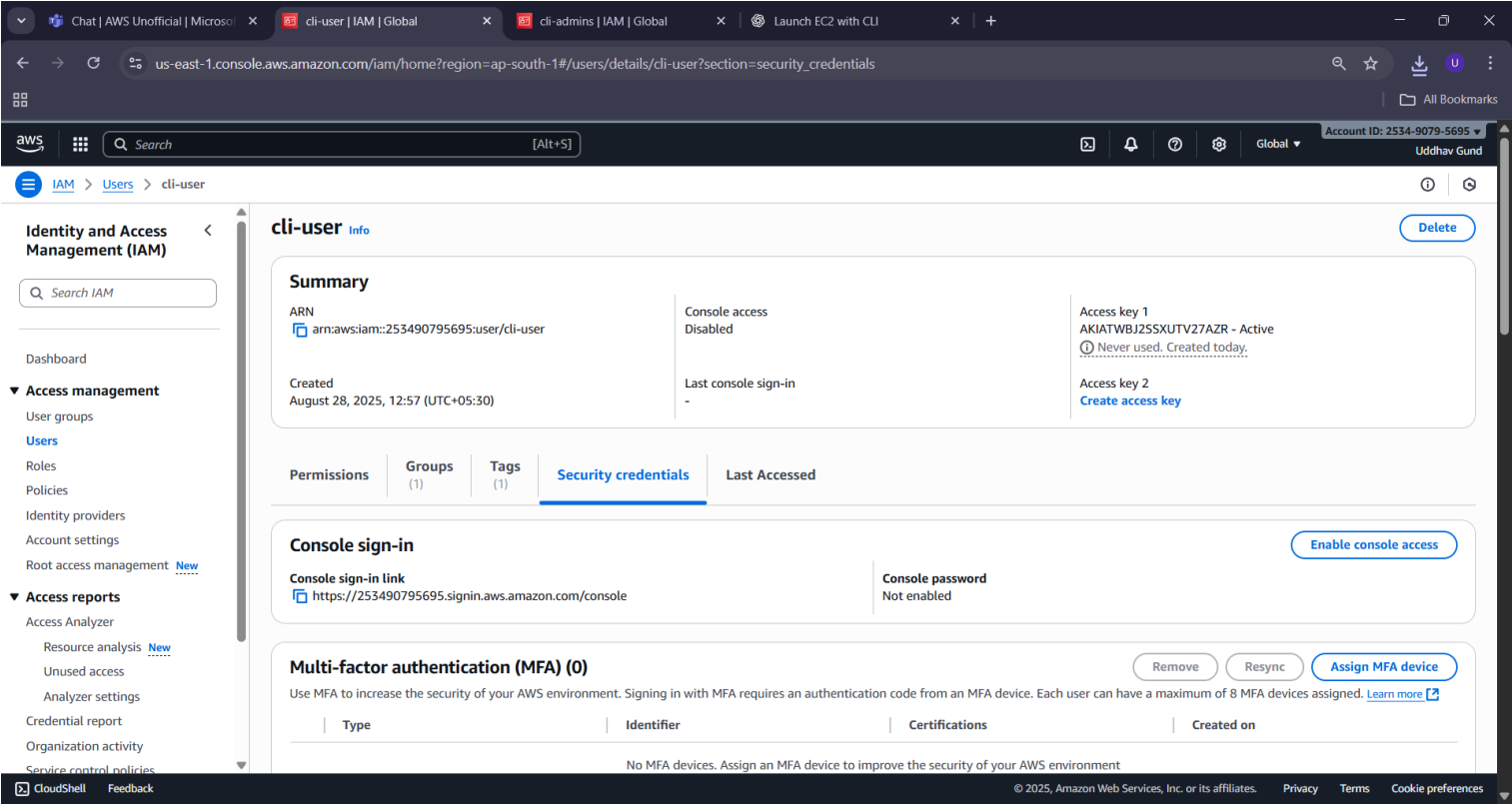
(Root has full, unsafe access — So I use IAM users are safer for daily tasks.)

An IAM user named cli-user was created with programmatic access enabled. The user was added to the cli-admins group, which has AdministratorAccess.

Security credentials were generated for CLI authentication.

STEP 2: AWS CLI Configuration

```
C:\Users\Lenovo>aws --version
aws-cli/2.21.2 Python/3.12.6 Windows/11 exe/AMD64

C:\Users\Lenovo>aws configure
AWS Access Key ID [***************.]: AKIATWBJ2SSXUTV27AZR
AWS Secret Access Key [***************.]: 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
Default region name [.]: ap-south-1
Default output format [.]: table

C:\Users\Lenovo>aws sts get-caller-identity
-------------------------------------------------------
|                   GetCallerIdentity                 |
+---------+-------------------------------------------+
|  Account|  253490795695                             |
|  Arn    |  arn:aws:iam::253490795695:user/cli-user  |
|  UserId |  AIDATWBJ2SSXRMN7GXEUO                     |
+---------+-------------------------------------------+
```
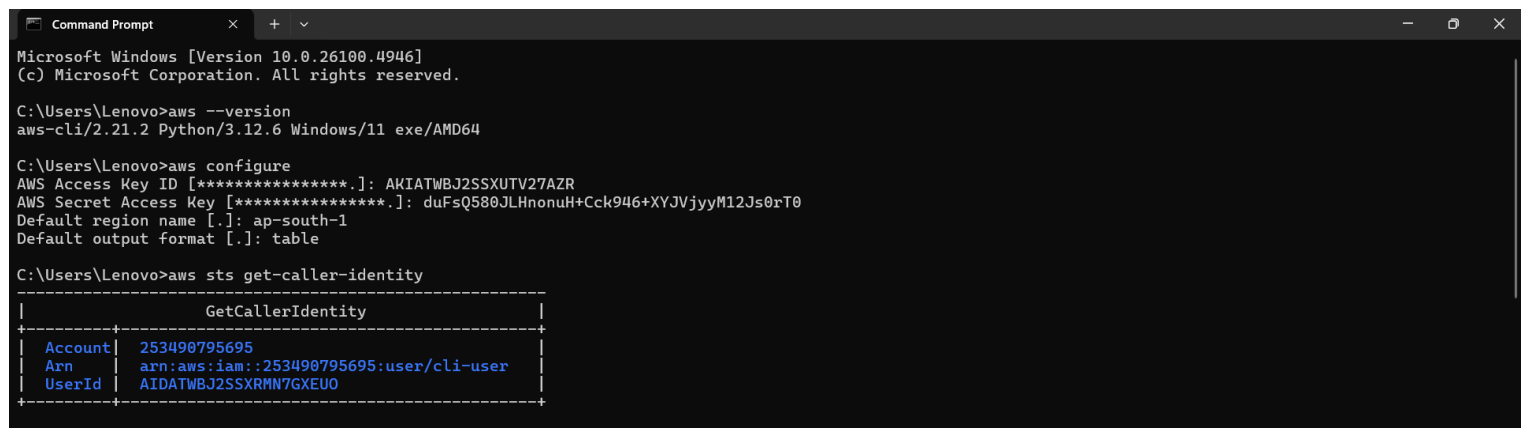

STEP 3: EC2 Launch Process

Steps executed via AWS CLI:
 a. Created a key pair (cli-ec2-key) for SSH access.
 b. Created a security group (cli-sg) with SSH access allowed.
 c. Retrieved the latest Amazon Linux 2 AMI ID.
 d. Launched a t2.micro EC2 instance with tag Name=cli-ec2-demo.
 e. Verify Instance

a. Create Key Pair

Command:

```
 aws ec2 create-key-pair --key-name cli-ec2-key --key-type rsa --key-format pem --query "KeyMaterial" --output text > cli-ec2-key.pem
```


b. Create Security Group

Command:

```
aws ec2 describe-vpcs --filters Name=isDefault,Values=true --region ap-south-1 --query "Vpcs[0].VpcId" --output text
```
Output: vpc-07c13630d129a6873

```
aws ec2 create-security-group --group-name cli-sg --description "Allow SSH from my IP" --vpc-id vpc-07c13630d129a6873 --region ap-south-1 --query "GroupId" --output text
```

Output: sg-099e174de5e16db21

c. Get Latest Amazon Linux 2023 AMI

<u>Command:</u>

aws ssm get-parameters --names /aws/service/ami-amazon-linux-latest/al2023-ami-kernel-6.1-x86_64 --region ap-south-1 --query "Parameters[0].Value" --output text

<u>Output:</u> ami-0861f4e788f5069dd

d. Launch EC2 Instance

<u>Command:</u>

aws ec2 run-instances --image-id ami-0861f4e788f5069dd --instance-type t2.micro --key-name cli-ec2-key --security-group-ids   sg-099e174de5e16db21   --region   ap-south-1   --tag-specifications ResourceType=instance,Tags=[{Key=Name,Value=cli-ec2-demo}]   --query   "Instances[0].InstanceId"   --output   text

<u>Output:</u>

i-0a36793136d80ca74

e. Verify Instance

<u>Command:</u>

aws   ec2   describe-instances   --instance-ids   i-0a36793136d80ca74   --region   ap-south-1   --query "Reservations[0].Instances[0].{InstanceId:InstanceId,State:State.Name,PublicIP:PublicIpAddress,PublicDNS:PublicDnsName}" --output table

<u>Output:</u>

```
---------------------------------------------------------------------
|                       DescribeInstances                           |
+------------+------------------------------------------------------+
| InstanceId|  i-0a36793136d80ca74                       |
| PublicDNS |  ec2-43-205-138-194.ap-south-1.compute.amazonaws.com   |
| PublicIP  |  43.205.138.194                        |
| State     |  running                               |
+------------+------------------------------------------------------+
```

```
C:\Users\Lenovo>aws ec2 describe-vpcs --filters Name=isDefault,Values=true --region ap-south-1 --query "Vpcs[0].VpcId" --output text
vpc-07c13630d129a6873

C:\Users\Lenovo>aws ec2 create-security-group --group-name cli-sg --description "Allow SSH from my IP" --vpc-id vpc-07c13630d129a6873 --region ap-south-1 --query "GroupId" --output text
sg-099e174de5e16db21

C:\Users\Lenovo>aws ssm get-parameters --names /aws/service/ami-amazon-linux-latest/al2023-ami-kernel-6.1-x86_64 --region ap-south-1 --query "Parameters[0].Value" --output text
ami-0861f4e788f5069dd

C:\Users\Lenovo>aws ec2 run-instances --image-id ami-0861f4e788f5069dd --instance-type t2.micro --key-name cli-ec2-key --security-group-ids sg-099e174de5e16db21 --region ap-south-1 --tag-specifications ResourceType=instance,Tags=[{Key=Name,Value=cli-ec2-demo}] --query "Instances[0].InstanceId" --output text
i-0a36793136d80ca74

C:\Users\Lenovo>aws ec2 describe-instances --instance-ids i-0a36793136d80ca74 --region ap-south-1 --query "Reservations[0].Instances[0].{InstanceId:InstanceId,State:State.Name,PublicIP:PublicIpAddress,PublicDNS:PublicDnsName}" --output table
---------------------------------------------------------------------
|                       DescribeInstances                           |
+------------+------------------------------------------------------+
| InstanceId|  i-0a36793136d80ca74                       |
| PublicDNS |  ec2-43-205-138-194.ap-south-1.compute.amazonaws.com   |
| PublicIP  |  43.205.138.194                        |
| State     |  running                               |
+------------+------------------------------------------------------+


C:\Users\Lenovo>
```

STEP4. EC2 CONSOLE VERIFICATION

The EC2 instance **cli-ec2-demo** is successfully running in the **ap-south-1a** Availability Zone, as seen in the AWS Management Console