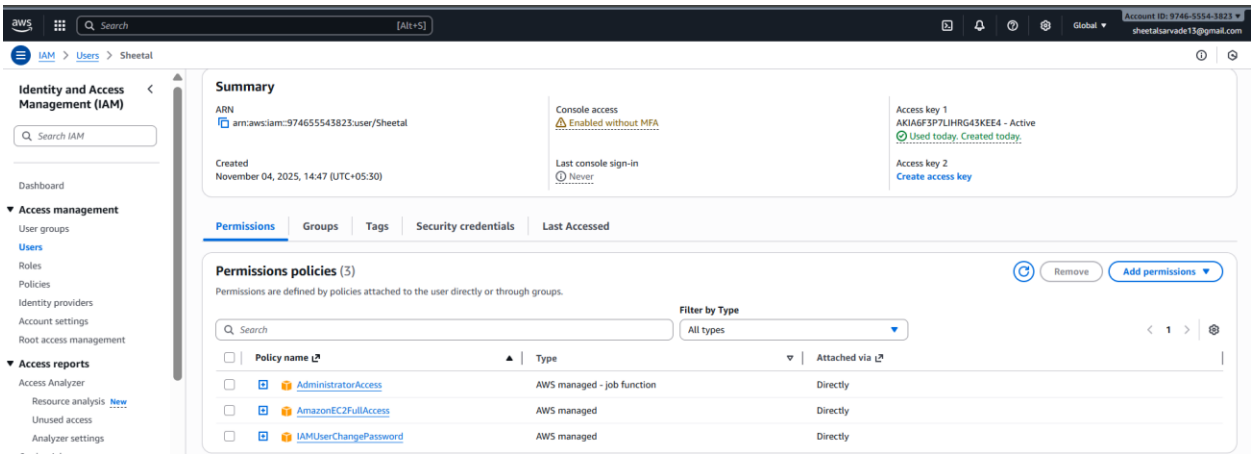
Create Ec2 Machine using CLI

- Create IAM user and add Access key , Administrative Permissions



- Configure AWS CLI

```
aws configure

AWS Access Key ID
AWS Secret Access Key
Default region name - us-east-1
Default output format - json
```

- aws sts get-caller-identity

```
{
   "UserId": "AIDA6F3P7LIHVZAJAW5HU",
   "Account": "974655543823",
   "Arn": "arn:aws:iam::974655543823:user/Sheetal"
}
```

- Attach Permission to IAM user related to EC2
- Script to launch EC2 using CLI

```
#!/bin/bash
# ------------------------------------------------------------
# Script: create-ec2-instance.sh
# Purpose: Launch an EC2 instance with security group & key pair
# Author: CloudOps Engineer
# ------------------------------------------------------------
```

```
# -------- Configuration --------
REGION="us-east-1"
INSTANCE_TYPE="t2.micro"
AMI_ID="ami-0c02fb55956c7d316"  # Amazon Linux 2 AMI (update for your region)
KEY_NAME="my-ec2-key"
SECURITY_GROUP_NAME="my-ec2-sg"
TAG_NAME="CloudOps-EC2-Demo"

# -------- Step 1: Create Key Pair --------
echo "Creating key pair: ${KEY_NAME}"
aws ec2 create-key-pair \
  --region $REGION \
  --key-name $KEY_NAME \
  --query 'KeyMaterial' \
  --output text > "${KEY_NAME}.pem"

chmod 400 "${KEY_NAME}.pem"
echo "Key pair saved as ${KEY_NAME}.pem"

# -------- Step 2: Create Security Group --------
echo "Creating security group: ${SECURITY_GROUP_NAME}"
SG_ID=$(aws ec2 create-security-group \
  --group-name "$SECURITY_GROUP_NAME" \
  --description "Security group for EC2 demo" \
  --region $REGION \
  --query 'GroupId' \
  --output text)

echo "Security Group ID: $SG_ID"

# Add inbound rules for SSH (22) and HTTP (80)
aws ec2 authorize-security-group-ingress --group-id "$SG_ID" --protocol tcp --port 22 --cidr 0.0.0.0/0 --region $REGION
aws ec2 authorize-security-group-ingress --group-id "$SG_ID" --protocol tcp --port 80 --cidr 0.0.0.0/0 --region $REGION

# -------- Step 3: Launch EC2 Instance --------
echo "Launching EC2 instance..."
INSTANCE_ID=$(aws ec2 run-instances \
  --image-id $AMI_ID \
  --instance-type $INSTANCE_TYPE \
  --key-name $KEY_NAME \
  --security-group-ids $SG_ID \
```

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  --region $REGION \
  --tag-specifications
"ResourceType=instance,Tags=[{Key=Name,Value=$TAG_NAME}]" \
  --query 'Instances[0].InstanceId' \
  --output text)

echo "Instance ID: $INSTANCE_ID"

# -------- Step 4: Wait for Instance to be Running --------
echo "Waiting for instance to enter 'running' state..."
aws ec2 wait instance-running --instance-ids $INSTANCE_ID --region $REGION

# -------- Step 5: Retrieve Public IP --------
PUBLIC_IP=$(aws ec2 describe-instances \
  --instance-ids $INSTANCE_ID \
  --region $REGION \
  --query "Reservations[0].Instances[0].PublicIpAddress" \
  --output text)

echo "Instance is ready!"
echo "Public IP: ${PUBLIC_IP}"
echo "You can SSH using: ssh -i ${KEY_NAME}.pem ec2-user@${PUBLIC_IP}"

# -------- Step 6: Display Summary --------
echo "------------------------------------------------------------"
echo "EC2 Instance Summary:"
echo "Region:       $REGION"
echo "Instance Type: $INSTANCE_TYPE"
echo "Instance ID:   $INSTANCE_ID"
echo "Public IP:     $PUBLIC_IP"
echo "Key Pair:      ${KEY_NAME}.pem"
echo "Security Group: $SG_ID"
echo "Tag:          $TAG_NAME"
echo "------------------------------------------------------------"
```

- EC2 Machine Launched