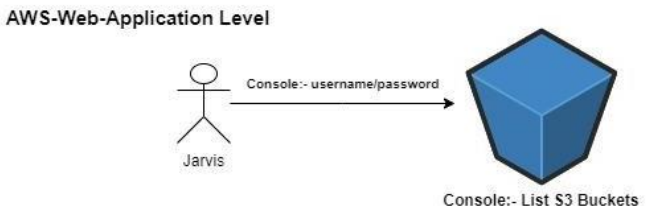
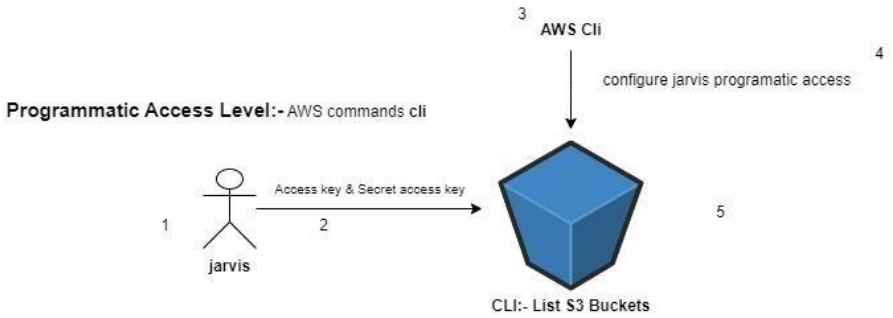
IAM - Identity and Access Management

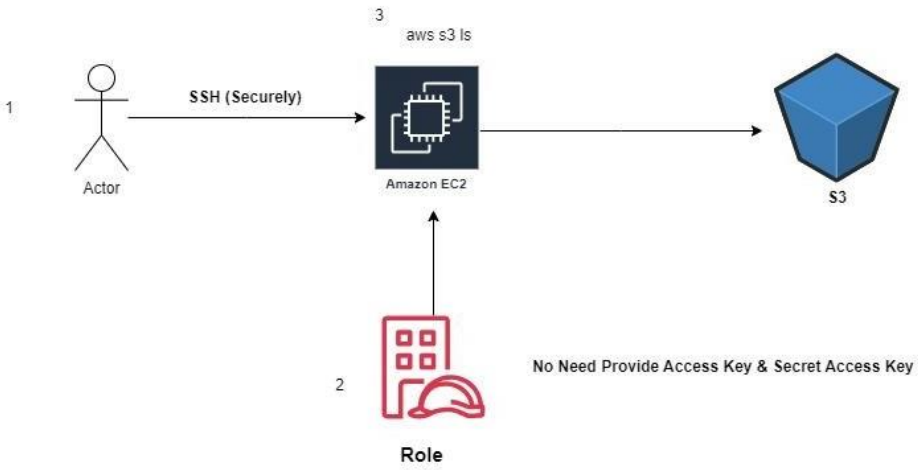
I want to check my all S3 Buckets :- Using Console/Programmatic Access/Roles

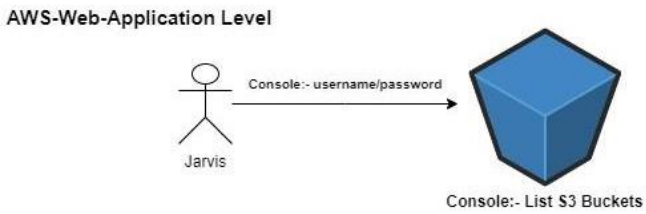
Text





Now we are going from more secure way while using Role, here with role aur access keys and secret access keys are not exposed while working or while configuring.....



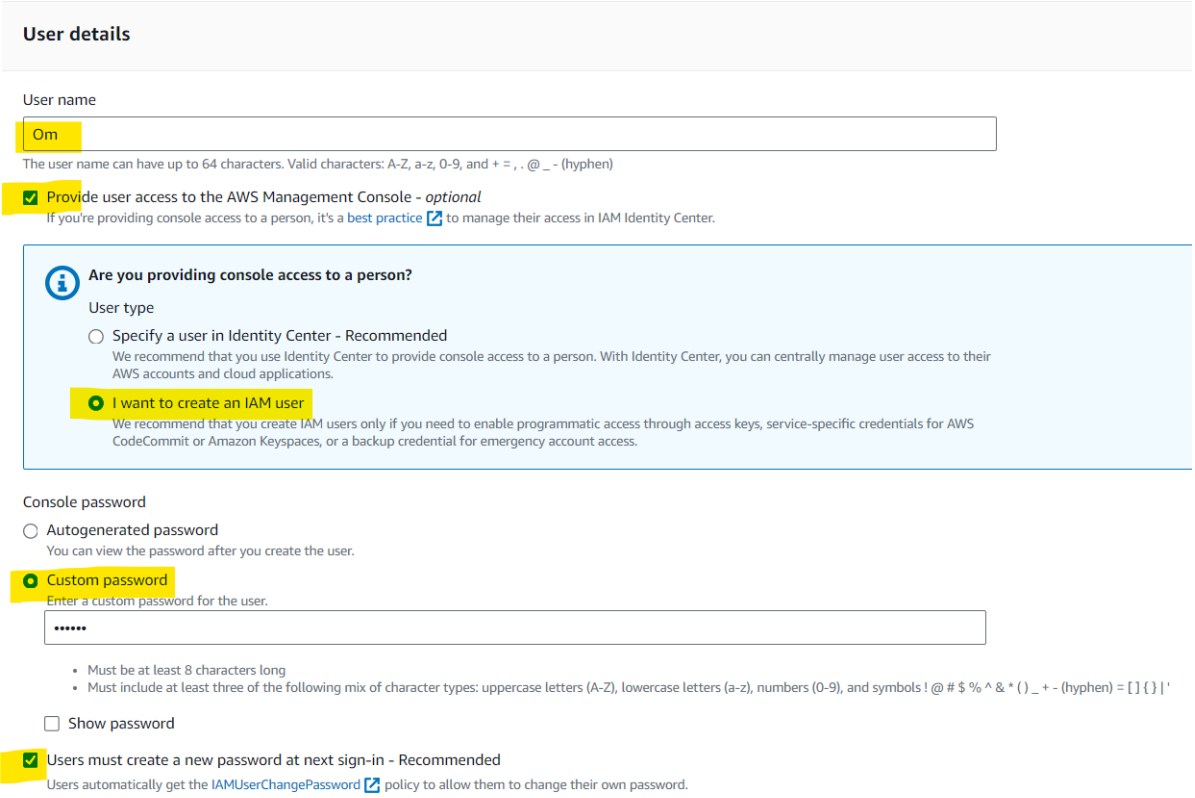


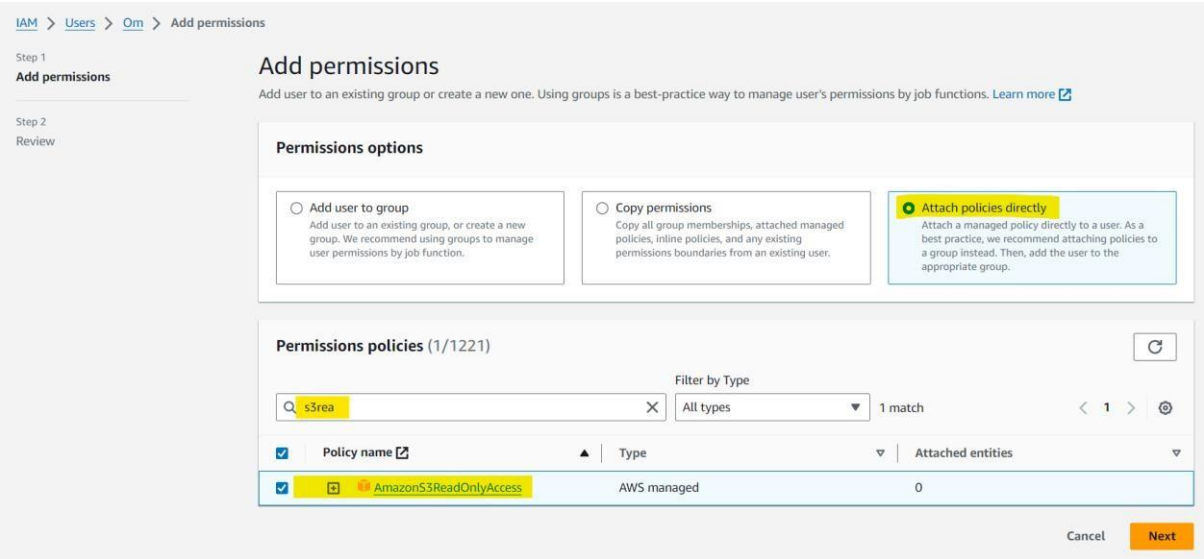
Use IAM Service

1. AWS – web application level.

Create a user in IAM

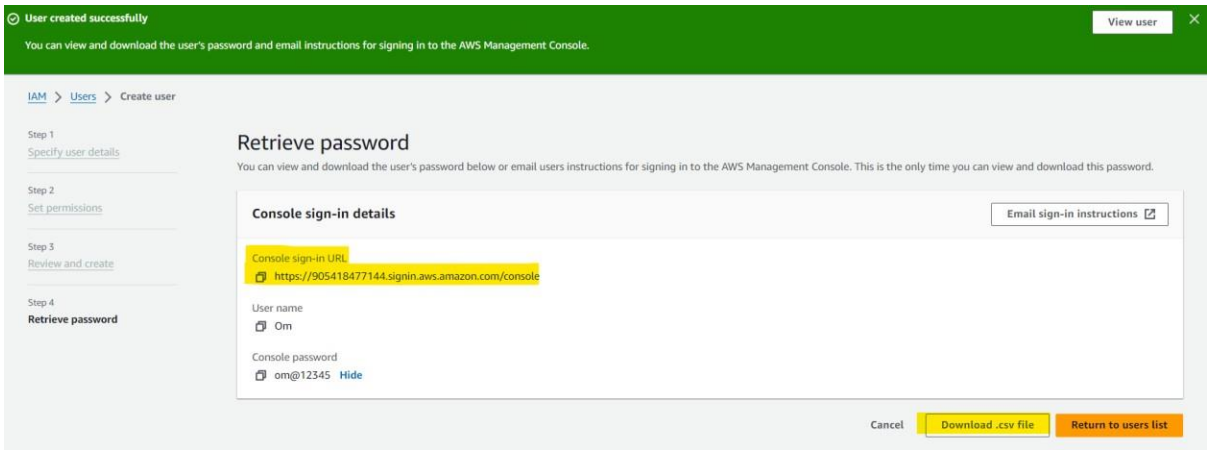
We can access any service using **AWS – web application level.** (As per above diagram -1



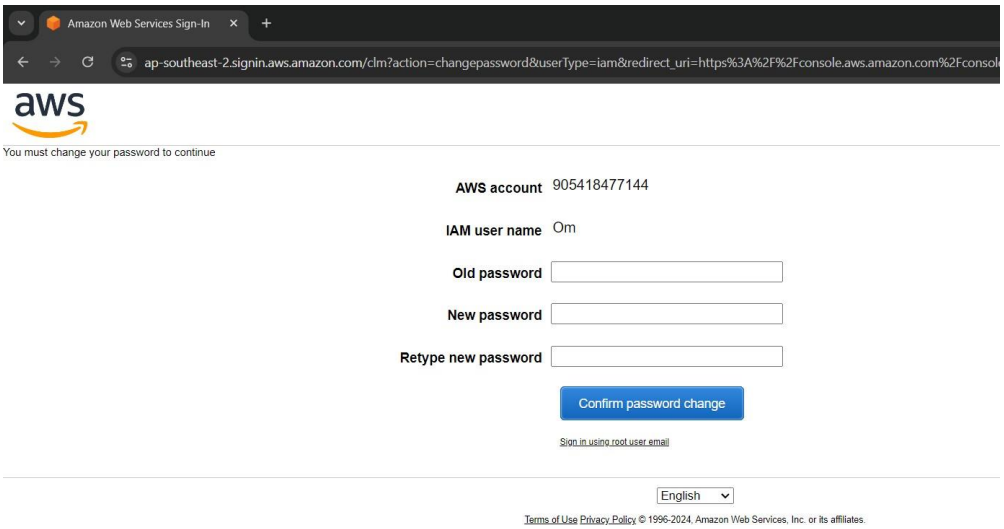


Review and create user.

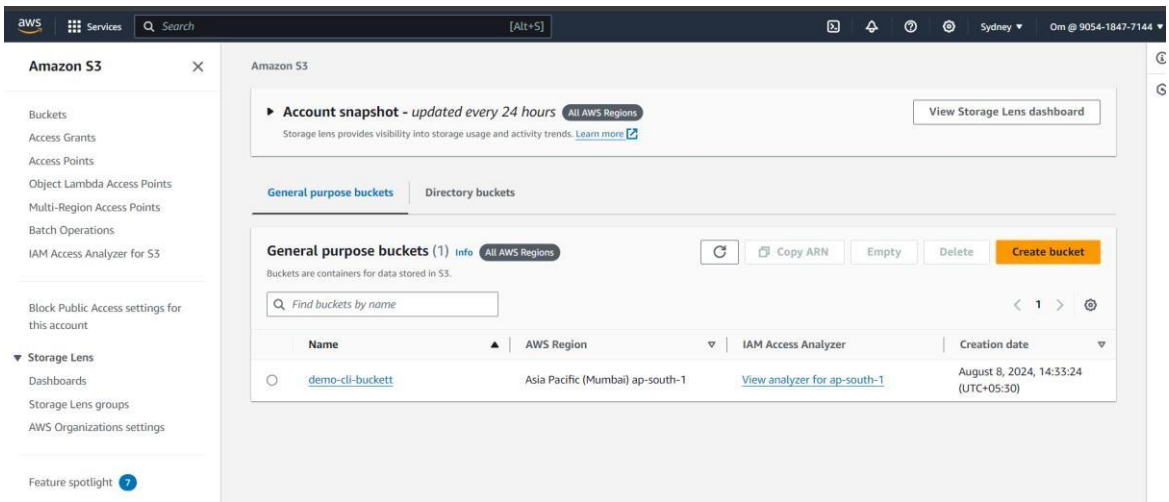
Download .csv file (Contain User name, Password, Console sign-in URL & paste console URL to incognito to check login.



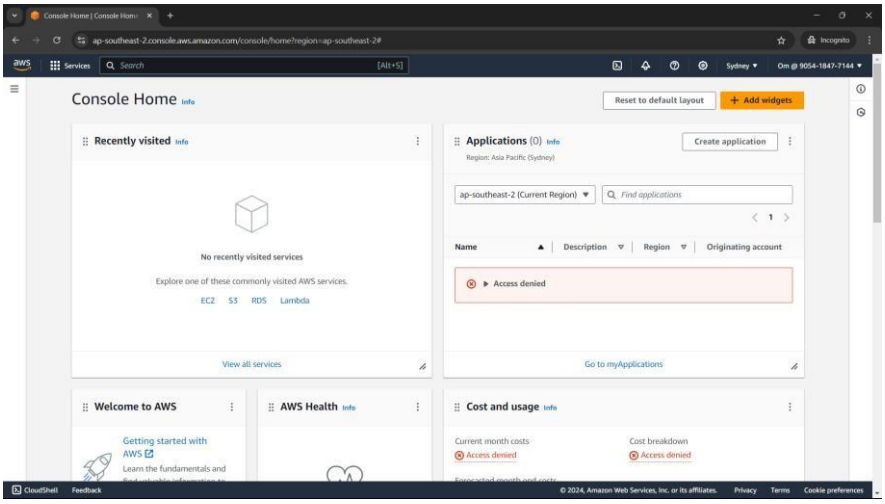
Here need to change the password.



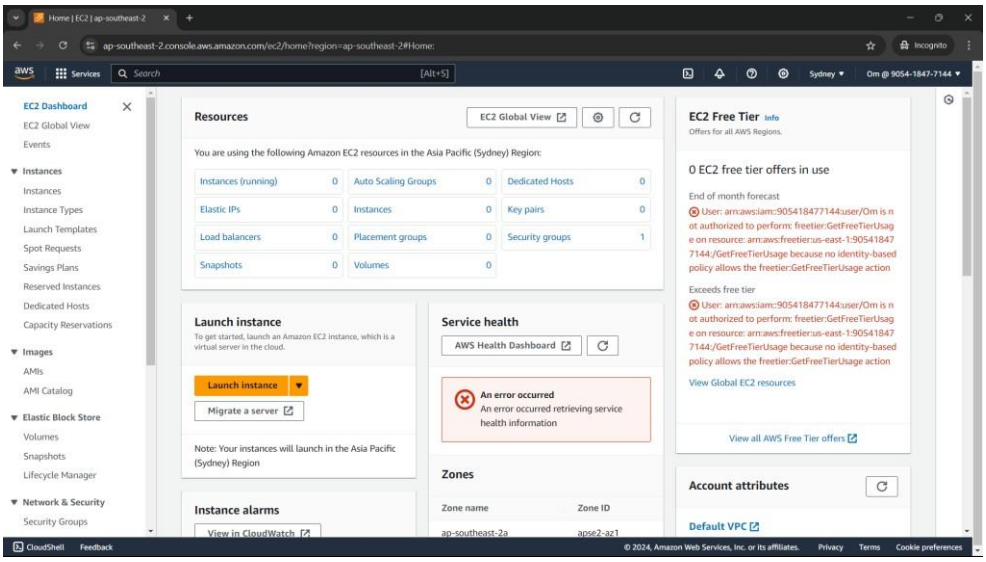
Create a demo S3 bucket in aws root user & check using IAM user that can be access.



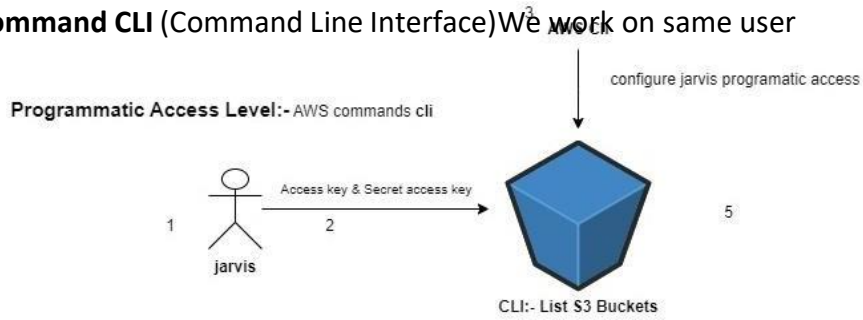
Console home for newly created IAM user with assigned limited policies. (ie. Ec2 full access

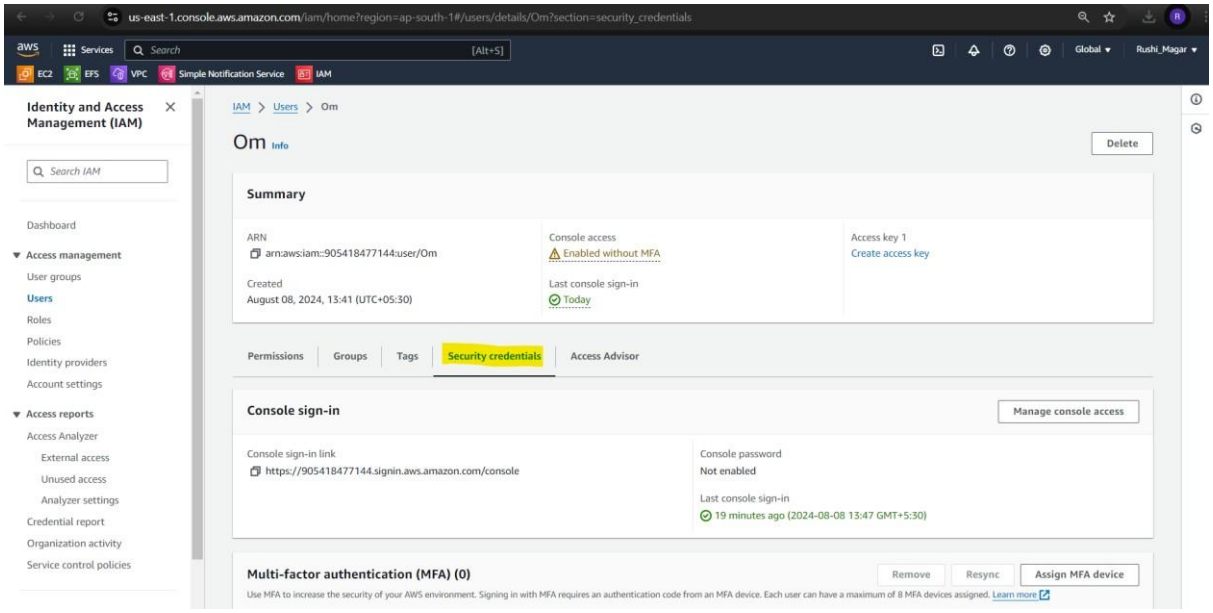


We can access only ec2 services.

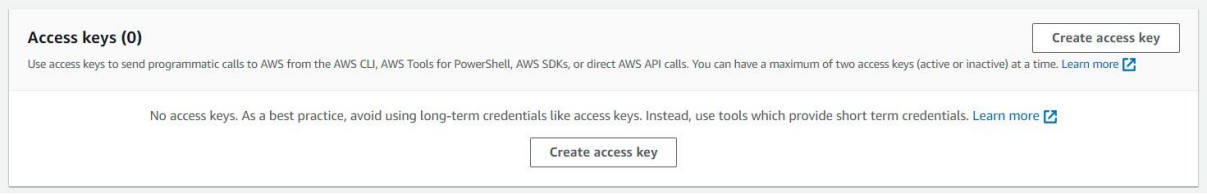


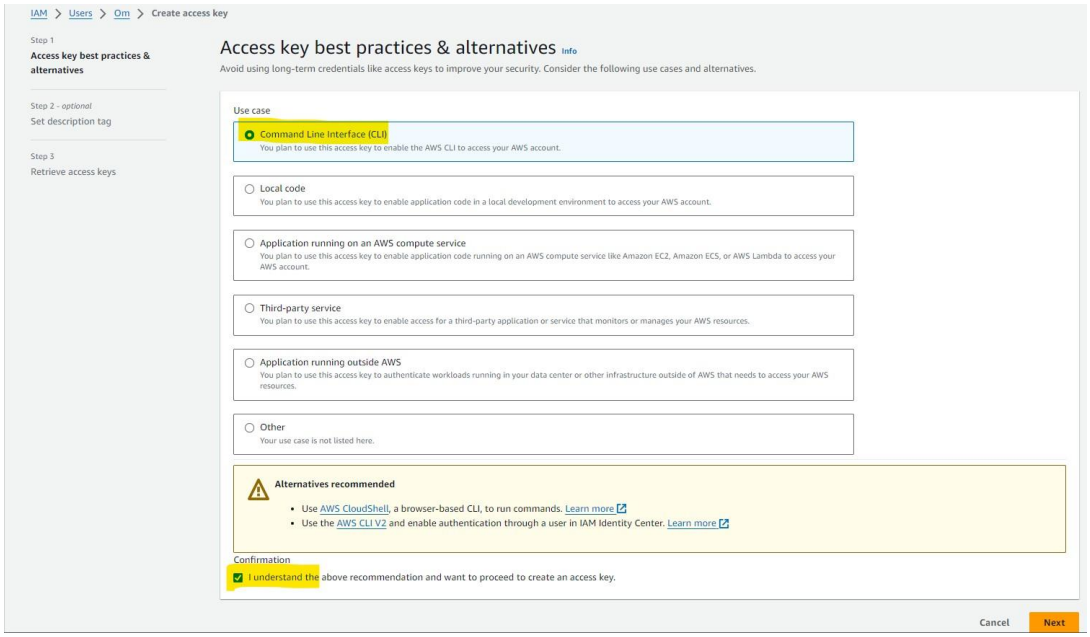
2. Programmatic Access Level - AWS Command CLI (Command Line Interface)We work on same user
User ⍰security credentials ⍰ access key



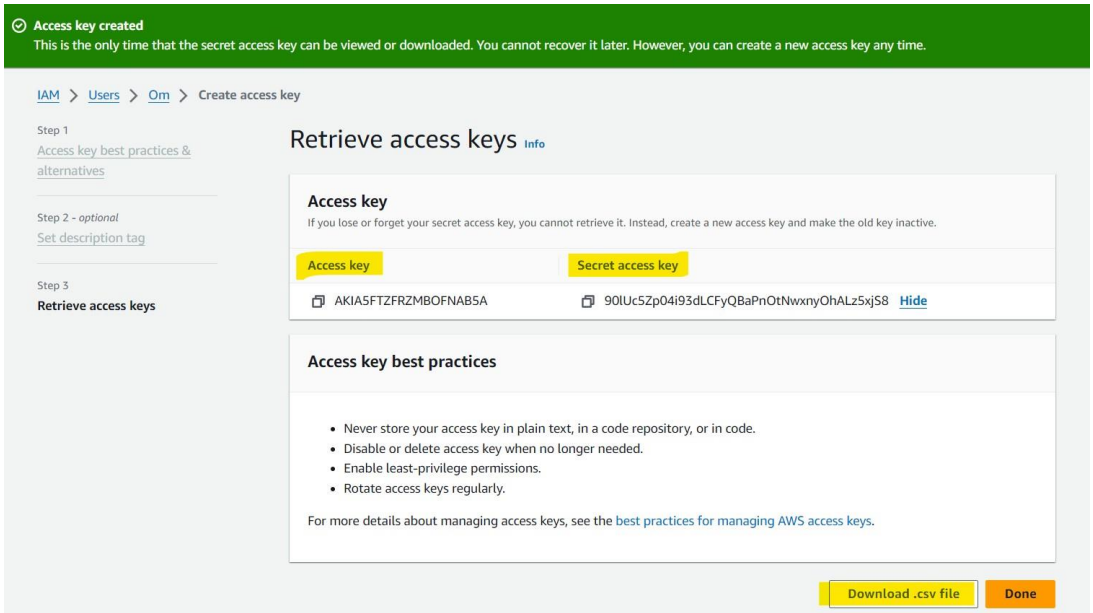


Create access key



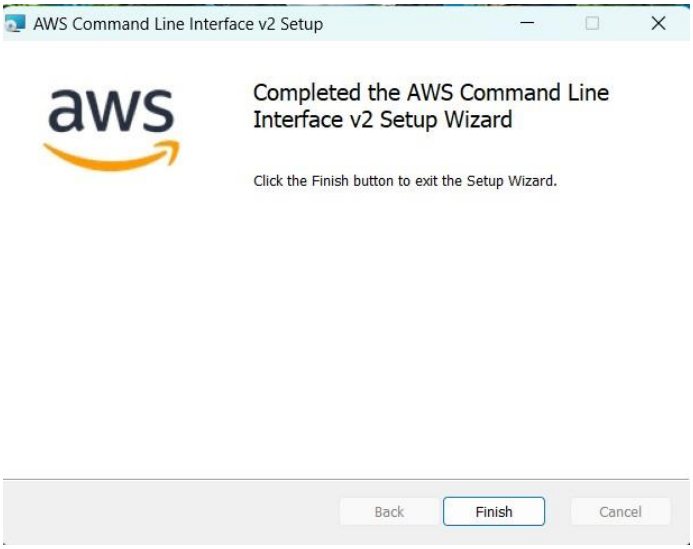


Download .csv file & secret access key is one time shown.



Now, install amazon CLI that is for Windows

https://docs.aws.amazon.com/cli/latest/userguide/getting-started-install.html



Create a sample S3 bucket (that we already created and try to access them using CLI using AWS Access key ID & AWS Secret Access key ID

```
Command Prompt

Microsoft Windows [Version 10.0.22631.3880]
(c) Microsoft Corporation. All rights reserved.

C:\Users\rushi>aws --version
aws-cli/2.17.25 Python/3.11.9 Windows/10 exe/AMD64

C:\Users\rushi>aws configure
AWS Access Key ID [None]: AKIA5FTZFRZMBOFNAB5A
AWS Secret Access Key [None]: 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
Default region name [None]:
Default output format [None]:

C:\Users\rushi>aws s3 ls
2024-08-08 14:33:24 demo-cli-buckett

C:\Users\rushi>
```

Now for Linux-

Create an Instance & connect it to MobaXterm

https://docs.aws.amazon.com/cli/latest/userguide/getting-started-install.html

Follow AWS CLI install and update instructions for Linux

- **Downloading from the URL** – To download the installer with your browser, use the following URL: https://awscli.amazonaws.com/awscli-exe-linux-x86_64.zip

Commands-

sudo apt update

wget https://awscli.amazonaws.com/awscli-exe-linux-x86_64.zip & sudo apt-get install zip -y

ls → awscli-exe-linux-x86_64.zip wget-log

unzip awscli-exe-linux-x86_64.zip

ls → aws awscli-exe-linux-x86_64.zip wget-log

cd aws

ls → README.md THIRD_PARTY_LICENSES dist install

sudo ./install

aws --version

aws configure

AWS Access Key ID [None]: AKIA5FTZFRZMBOFNAB5A

AWS Secret Access Key [None]: 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

aws s3 ls

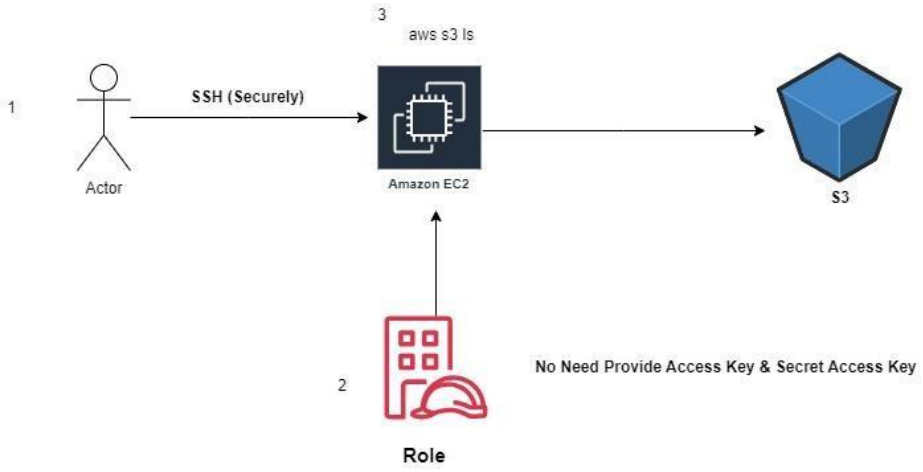
```
ubuntu@ip-172-31-38-155:~$ wget https://awscli.amazonaws.com/awscli-exe-linux-x86_64.zip & sudo apt-get install zip -y
[1] 1638

Redirecting output to 'wget-log'.
Reading package lists... Done
```

```
[1]+  Done                    wget https://awscli.amazonaws.com/awscli-exe-linux-x86_64.zip
ubuntu@ip-172-31-38-155:~$ ls
awscli-exe-linux-x86_64.zip  wget-log
ubuntu@ip-172-31-38-155:~$ unzip awscli-exe-linux-x86_64.zip
Archive:  awscli-exe-linux-x86_64.zip
   creating: aws/
   creating: aws/dist/
```

```
  inflating: aws/dist/docutils/parsers/rst/include/isogrk1.txt
ubuntu@ip-172-31-38-155:~$ ls
aws  awscli-exe-linux-x86_64.zip  wget-log
ubuntu@ip-172-31-38-155:~$ cd aws
ubuntu@ip-172-31-38-155:~/aws$ ls
README.md  THIRD_PARTY_LICENSES  dist  install
```

```
ubuntu@ip-172-31-38-155:~/aws$ sudo ./install
You can now run: /usr/local/bin/aws --version
ubuntu@ip-172-31-38-155:~/aws$ aws --version
aws-cli/2.17.25 Python/3.11.9 Linux/6.8.0-1009-aws exe/x86_64.ubuntu.24
ubuntu@ip-172-31-38-155:~/aws$ aws configure
AWS Access Key ID [None]: AKIA5FTZFRZMBOFNAB5A
AWS Secret Access Key [None]: 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
Default region name [None]:
Default output format [None]:
ubuntu@ip-172-31-38-155:~/aws$ aws s3 ls
2024-08-08 09:03:26 demo-cli-buckett
ubuntu@ip-172-31-38-155:~/aws$
```

Now we are going from more secure way while using the Role, here with the role our access key and secret access keys are not exposed while working or while configuring



Create new user

User details

User name

Sanket

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

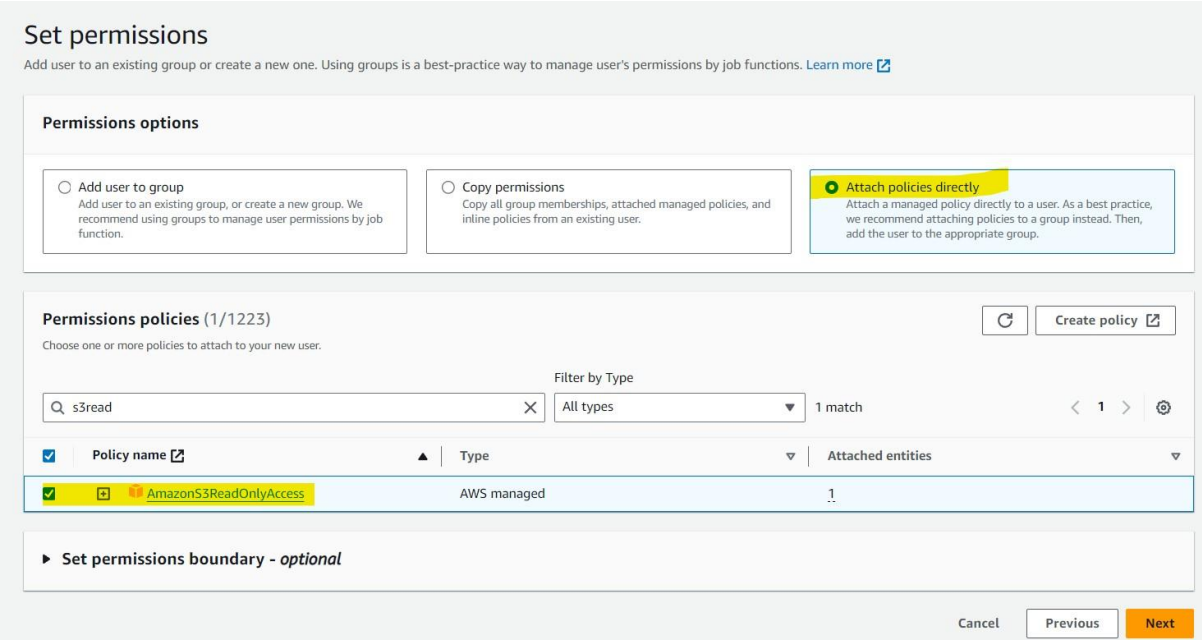
Enter a custom password for the user.

sanket@123

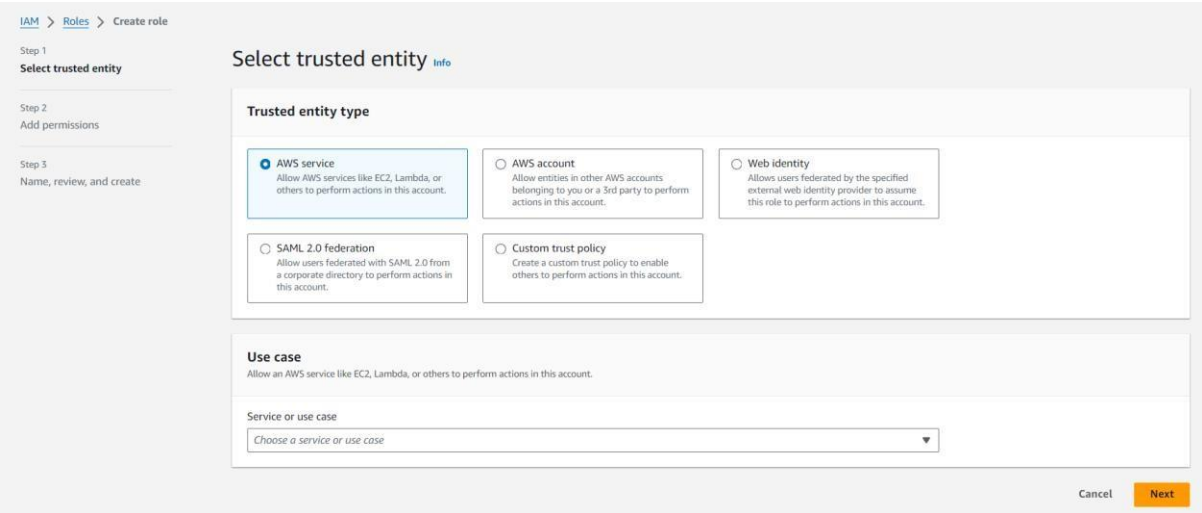
- Must be at least 8 characters long
- Must include at least three of the following mix of character types: uppercase letters (A-Z), lowercase letters (a-z), numbers (0-9), and symbols ! @ # $ % ^ & * ( ) _ + - (hyphen) = [ ] { } | '

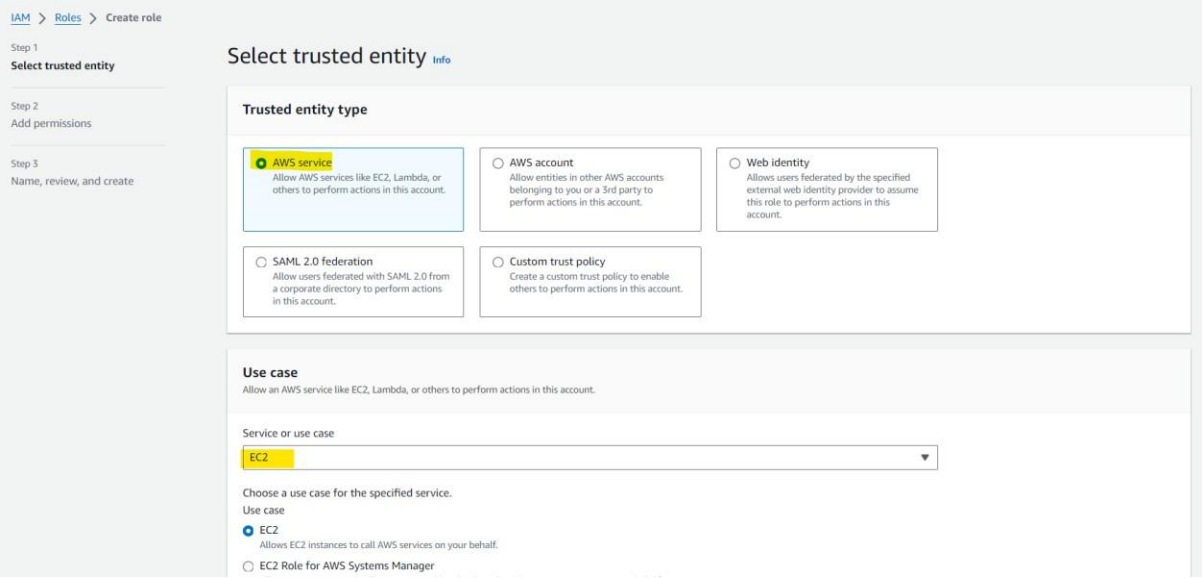
☑ Show password

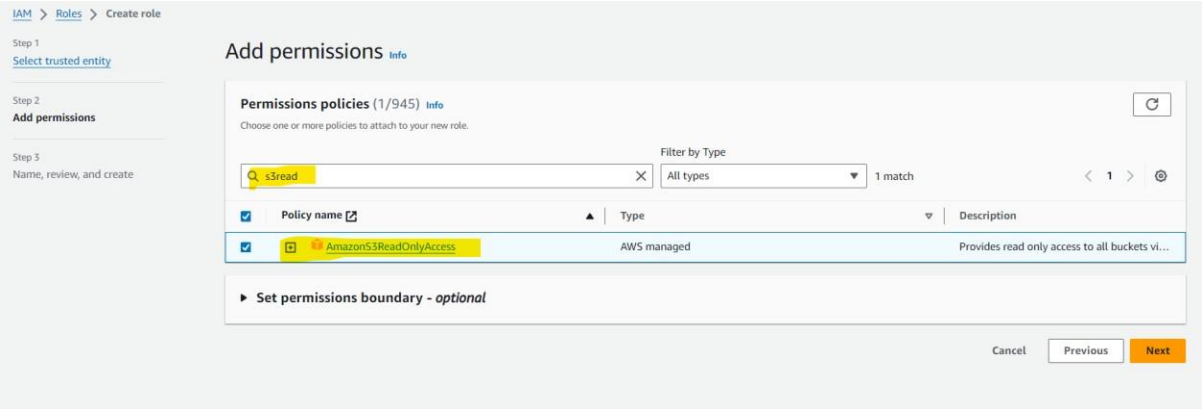
☑ Users must create a new password at next sign-in - Recommended



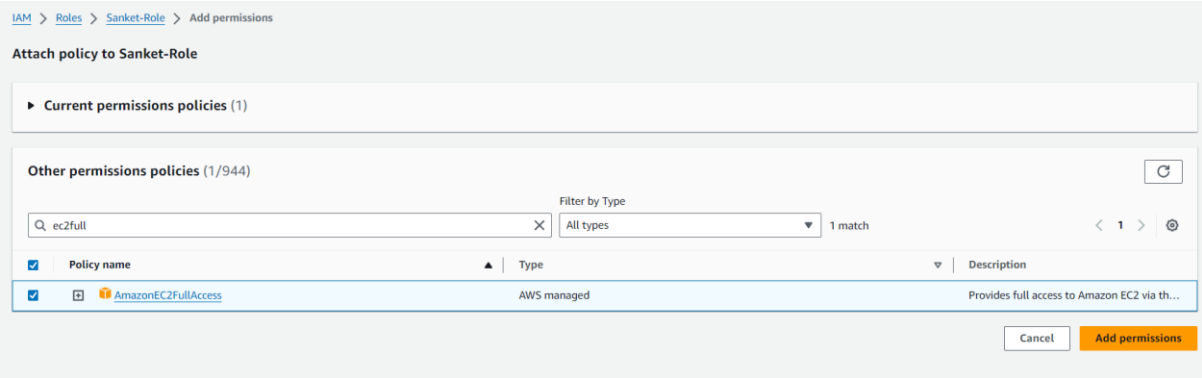
Create Role for user (Sanket

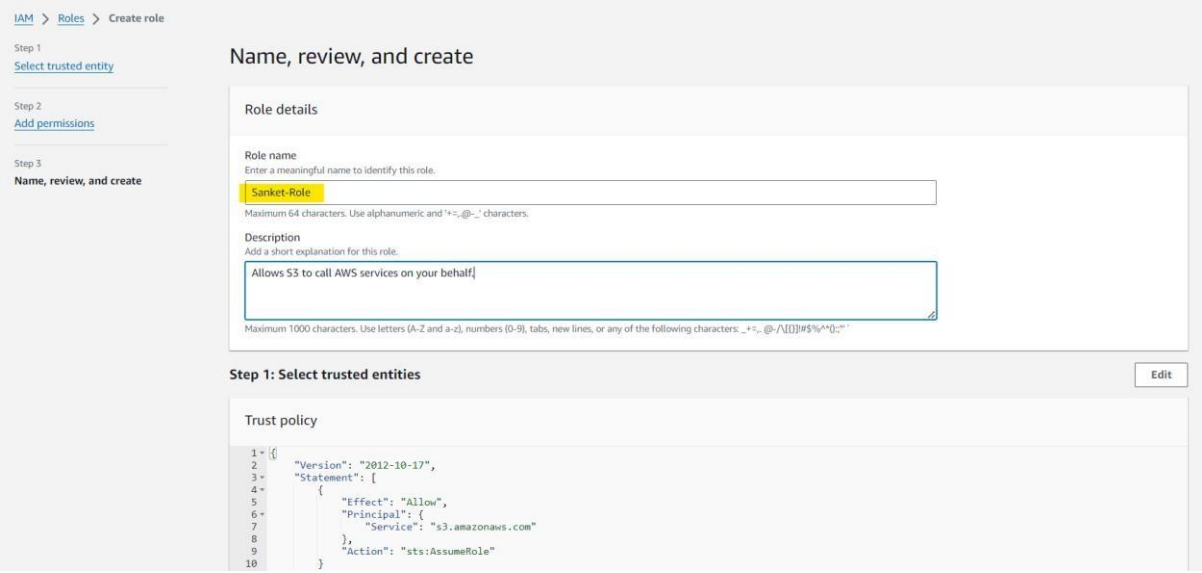




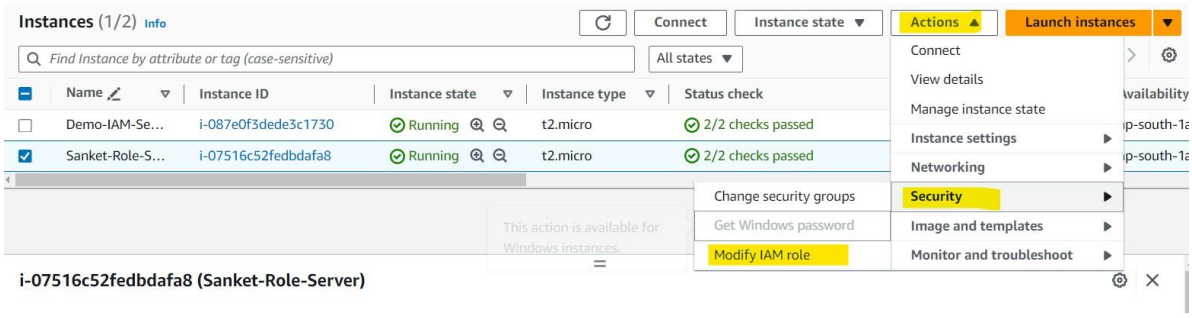


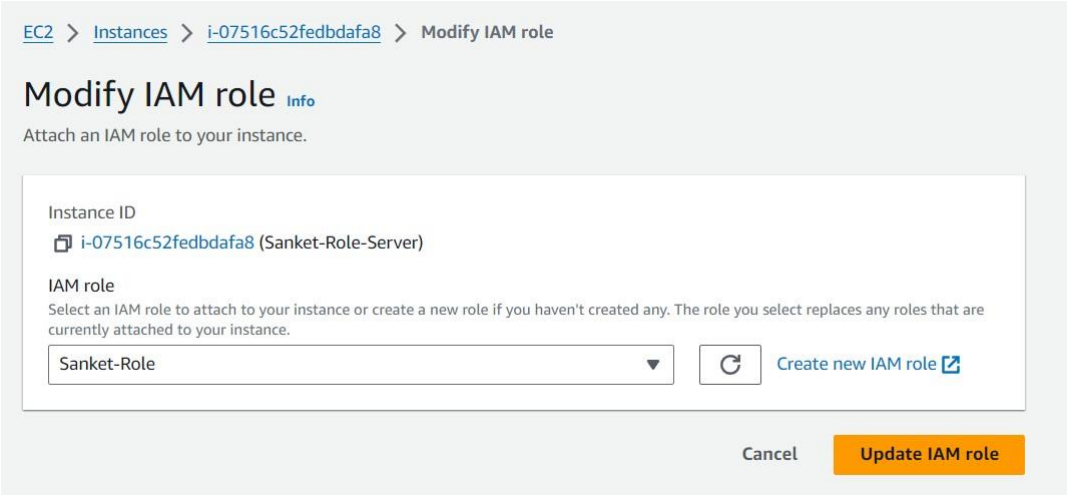
Add one more permission policy





Create new instance with aws root & Action→Security→modify IAM role





Connect to MobaXterm

wget https://awscli.amazonaws.com/awscli-exe-linux-x86_64.zip & sudo apt-get install zip -y

ubuntu@ip-172-31-45-198:~$ ls

awscli-exe-linux-x86_64.zip wget-log

ubuntu@ip-172-31-45-198:~$ unzip awscli-exe-linux-x86_64.zip

```
To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

ubuntu@ip-172-31-45-198:~$ wget https://awscli.amazonaws.com/awscli-exe-linux-x86_64.zip & sudo apt-get install zip -y
[1] 1165

Redirecting output to 'wget-log'.
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following additional packages will be installed:
  unzip
```

```
[1]+  Done                    wget https://awscli.amazonaws.com/awscli-exe-linux-x86_64.zip
ubuntu@ip-172-31-45-198:~$ ls
awscli-exe-linux-x86_64.zip  wget-log
ubuntu@ip-172-31-45-198:~$ unzip awscli-exe-linux-x86_64.zip
Archive:  awscli-exe-linux-x86_64.zip
   creating: aws/
   creating: aws/dist/
  inflating: aws/THIRD_PARTY_LICENSES
  inflating: aws/README.md
  inflating: aws/install
   creating: aws/dist/awscli/
   creating: aws/dist/cryptography/
```

```
ubuntu@ip-172-31-45-198:~$ ls
aws  awscli-exe-linux-x86_64.zip  wget-log
ubuntu@ip-172-31-45-198:~$ cd aws
ubuntu@ip-172-31-45-198:~/aws$ ls
README.md  THIRD_PARTY_LICENSES  dist  install
ubuntu@ip-172-31-45-198:~/aws$ sudo ./install
You can now run: /usr/local/bin/aws --version
ubuntu@ip-172-31-45-198:~/aws$ aws --version
aws-cli/2.17.25 Python/3.11.9 Linux/6.8.0-1009-aws exe/x86_64.ubuntu.24
ubuntu@ip-172-31-45-198:~/aws$ aws s3 ls
2024-08-08 09:03:26 demo-cli-buckett
ubuntu@ip-172-31-45-198:~/aws$ \
```

Multi-factor authentication (MFA