

EE4221 Lab 1: Using AWS Command-Line Interface (CLI) Checkpoints and Lab Assignments

Objective:

- Learn to install AWS CLI and configure its access keys
- Learn to use AWS CLI to control AWS web services
- Learn to use AWS CLI with role switching

Task 1. Uploading files to Amazon S3 using AWS CLI

This task guides you to set up AWS Command Line Interface (CLI) and use it to access Amazon S3. It is useful for you to build your own scripts for backing up your files to the cloud and easily retrieve them as needed. It will make automating your backup process faster, more reliable, and more programmatic. You can use this information to build a scheduled task (or cron job) to handle your backup operations.

First, read this tutorial and learn what you need to set up for using AWS CLI:

- <https://aws.amazon.com/getting-started/tutorials/backup-to-s3-cli/>

In Vocareum, you do not have the permission to create secret access keys for IAM users. In order to use AWS CLI, you will use the course test account that we used in Lab 2. The secret access keys of the IAM user **ee4221-student** has been pre-generated.

Create access key

 **Success**

This is the **only** time that the secret access keys can be viewed or downloaded. You cannot recover them later. However, you can create new access keys at any time.

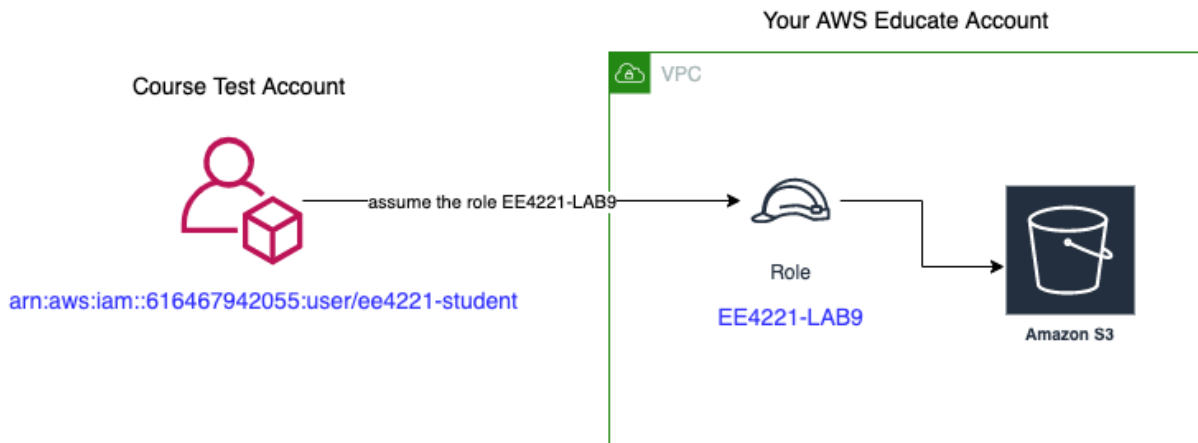
 Download .csv file

Access key ID	Secret access key
AKIAIY7CC2JKTW3BPUNHC	***** Show

The content of the CSV file is as follow:

Access key ID,Secret access key AKIAIY7CC2JKTW3BPUNHC,sXPRDbnBEkMOsMcShX6m1LD/i5g73E1eU14pDhPK

Similar to what you did in Lab 2, you will need to create an IAM role (**EE4221-LAB9**) to access Amazon S3 in your **AWS Educate Account** and attach a trust policy that allows the role to be assumed by an IAM user in the course test account **616467942055**.



You can configure AWS CLI to use an IAM role by defining a profile for the role. Read the CLI user guide below to learn more about this.

- <https://docs.aws.amazon.com/cli/latest/userguide/cli-configure-role.html>
- <https://docs.aws.amazon.com/cli/latest/userguide/cli-configure-profiles.html>

After setting the proper profile, use AWS CLI with the given secret access keys to:

- create a S3 bucket "lab9-xxxxxxx" in your AWS Educate Account, where the suffix xxxxxxx is your student ID; and
- upload a text file example.txt (with any random content) to your bucket.

Checkpoint 1:

- According to the principle of least privilege, which managed policy should you assign to the role **EE4221-LAB9** to let it create buckets and upload files to S3?
- Demonstrate that you can use AWS CLI to create the S3 bucket and upload the text file to the bucket. Explain your config file and show the CLI commands.

Checkpoint 2:

Assume your current working directory contains different types of files (e.g .txt, .jpg, .html, .js) under some subdirectories. You are asked to write a AWS CLI command that can upload all files ending with **.txt** extension to your S3 bucket "lab9-xxxxxxx". Other types of files are not uploaded. Explain your command briefly.

Task 2. Using Amazon SNS with the AWS CLI

The second task guides you to access the features of Amazon Simple Notification Service (Amazon SNS) using the AWS CLI. SNS is a highly available, durable, secure, fully managed pub/sub messaging service that enables you to decouple microservices, distributed systems, and serverless applications. Amazon SNS provides topics for high-throughput, push-based, many-to-many messaging. Using Amazon SNS topics, your publisher systems can fan out messages to a large number of subscriber endpoints for parallel processing, including Amazon SQS queues, AWS Lambda functions, and HTTP/S webhooks. Additionally, SNS can be used to fan out notifications to end users using mobile push, SMS, and email.

Complete this tutorial and use your student email address to subscribe the topic:

- <https://docs.aws.amazon.com/cli/latest/userguide/cli-services-sns.html>

Checkpoint 3:

- According to the principle of least privilege, which managed policy should you assign to the role **EE4221-LAB9** to let it create SNS topics and publish messages to the topics?
- Demonstrate that you can create a SNS topic, publish an message “Hello **EE4221!!!**” to the topic and then the subscriber (your email account) can receive the message.