Tutorial 0 - Getting Started with AWS

Version 0.10

Obtaining a User Account

Objective

The purpose of this tutorial is to describe how to establish AWS account(s) for supporting work in TCSS 462/562.

Before starting the tutorial, please complete the AWS Cloud Credits Survey at:

https://forms.gle/Y4iWvBRFVLRPnPX37

For the course, please create a personal AWS account using your UW NET ID email or other email account. An AWS account will be required to provide cloud computing resources for tutorials and the Term Project.

Use of a Linux environment is strongly recommended for AWS access.

For Windows users, there is an Ubuntu "App" that can be installed onto Windows directly. This provides an Ubuntu Linux environment without the use of Oracle Virtualbox. For this class, Windows and Mac users should install an Ubuntu Linux virtual machine. Windows users can install Oracle Virtual Box to create virtual machines, and then install an Ubuntu virtual machine. M1/M2/M3 Mac users can use UTM or Parallels instead of Oracle Virtual Box. Intel Mac users may be able to use Oracle Virtual Box for Mac. See Tutorial 1 for more details. **For more information regarding obtaining a Ubuntu environment, please refer to Tutorial #1.**

Task 1A – NEW AWS USERS: create an AWS account

Please create an AWS Free Tier account using your UW or personal email address.

There are two Free Tier account options. Please choose and create the most appropriate account for your expected usage.

The '**Free Plan**' provides restricted access to a subset of AWS services for 6 months at no charge. A credit card is required to be on file, but no charges are made to the card. $100 in initial credits are provided which expire in 12 months, but the account will automatically deactivate if not upgraded to a "Paid Plan" by the end of 6 months.

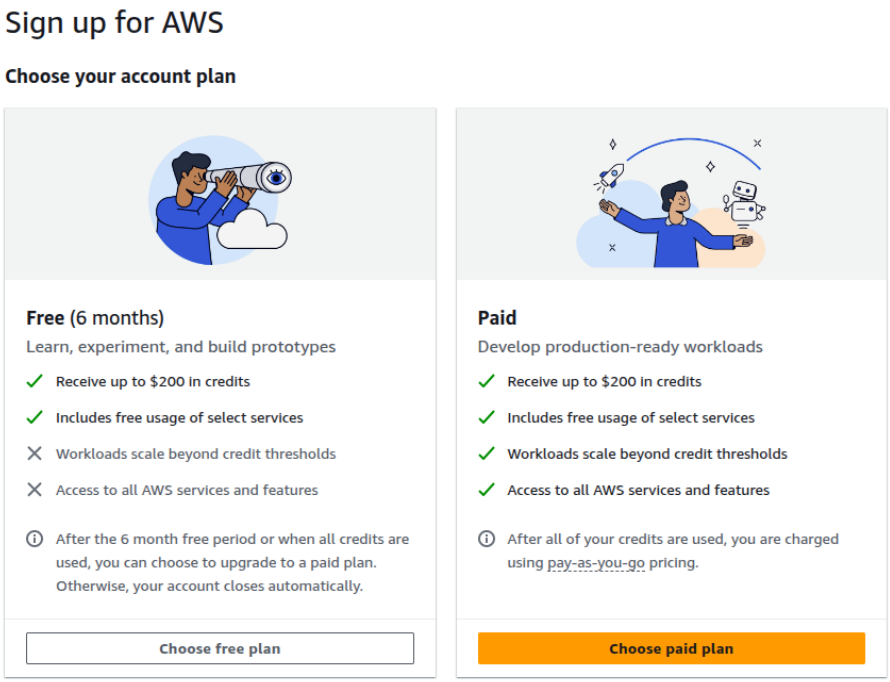
The '**Paid Plan**' provides unrestricted access to all AWS services. $100 in initial credits are provided which expire in 12 months. Any use of AWS services that exceeds free tier resources and cloud computing credits will result in a charge to your credit card with a 'Paid Plan' account. A 'Paid Plan' account is essentially a general AWS account.

Regardless of the account type, you can **earn** up to an additional $100 Free Tier credits by completing activities in the Explore AWS widget by their specified completion date. To view activities, visit the Explore AWS widget found on your AWS Console Home dashboard (https://console.aws.amazon.com/console/home) and by setting the filter to "Earn AWS credits", or visit Earning additional credits.

As a student in TCSS 462/562, you can also request an additional $100 in Free Tier credits (expiry Sept 2026). See instructions under Task 1B.

To get started, navigate to the website (**https://aws.amazon.com/free/**) and click the "Create Account" button in the upper-right hand corner:

Complete the registration following all instructions.



If you are unable to create an AWS account because you do not have access to a personal credit card, please contact the instructor by email. Use the subject line "AWS IAM ACCOUNT NEEDED". Use this option only if you will not have access to a personal credit card during the Fall Quarter.

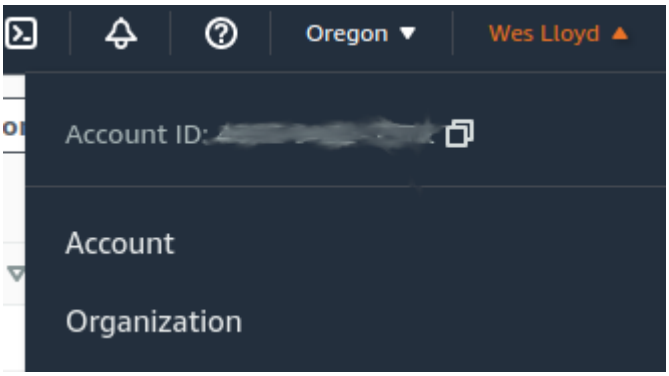
Task 1B – EXISTING AWS USERS: request AWS cloud credits

If you already have an AWS account created before July 15, 2025, and need cloud computing credits for TCSS 462/562, please email the instructor with the subject line:

EMAIL SUBJECT LINE: **"AWS CREDIT REQUEST"**

Failure to use this subject line, may result in a delay, or no response at all to your request. In the email, please include the email address associated with your AWS account as well as the 12-digit account ID to identify the account. This information is used for record keeping purposes to track which accounts receive AWS accounts provided to UW.

Log into your AWS account. In the upper-right hand corner, select your name. The account ID appears after "Account ID:". The example is blurred out:

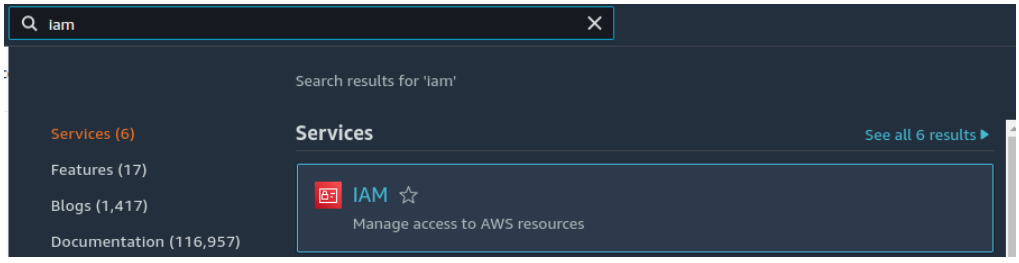


After a few days, you should receive an email with a credit code. To enter the credit code, in the upper-right hand corner, select your name, and "Billing and Cost Management". On the left-hand side menu, under "Billing and Payments", select "Credits". Then click the "Redeem credit" button. Enter the promotion code, and security code. If the credit code works, you should see the credits added to account along with an expiration date. If the credit code does not work, please contact the instructor.

Task 2 – Create AWS Account Credentials

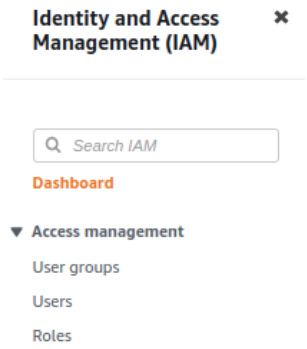
Once having access to AWS, create AWS account credentials to work with virtual machines on EC2, if you have not already done so. Credentials are required to access virtual machines by remote shell (SSH), and also to use the AWS command line interface, and programming APIs.

From the AWS services drop-down list, search for "IAM", which stands for Identity Access Management. This is under the "Security" group of service, select it:



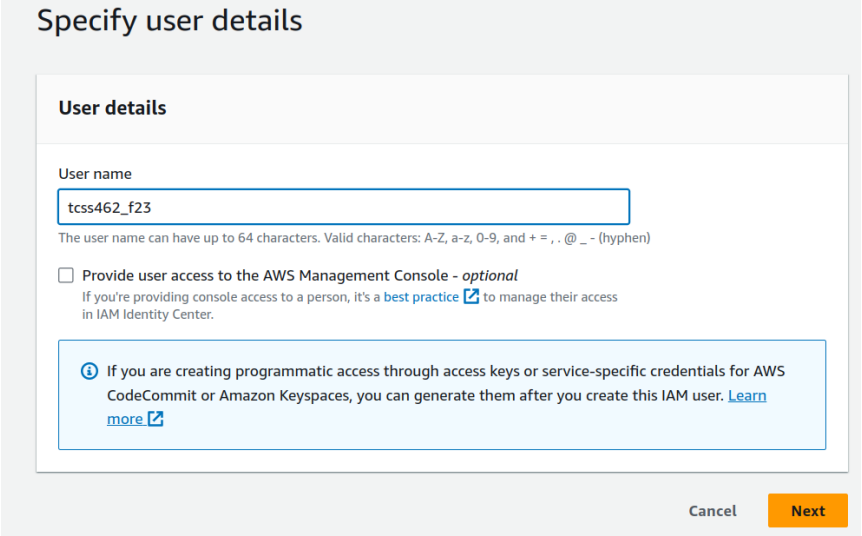
Optionally, IAM can be accessed by clicking on your name in the upper-right hand corner, and selecting "Security credentials".

Once in the IAM dashboard, on the left hand-side select “Users”:



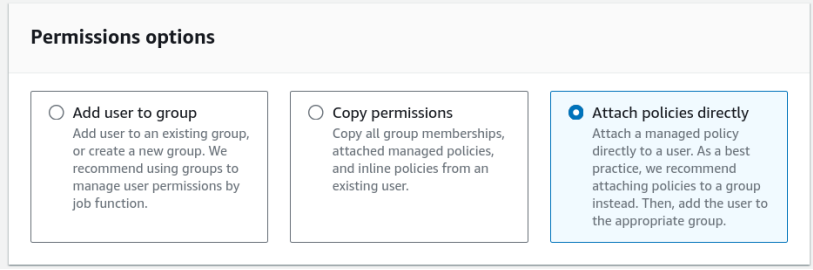
You may need to press “Create user”, if there are no users.
If there are users, select your user.

For creating a new users, provide a user account name. Here I am using “tcss462_f23” as an example:



Then click the “Next” button…

Now select the “Attach policies directly” option:



And down below on the screen, using the search box, search for, find, and add by selecting the checkbox the following policies:

* **AmazonEC2FullAccess**

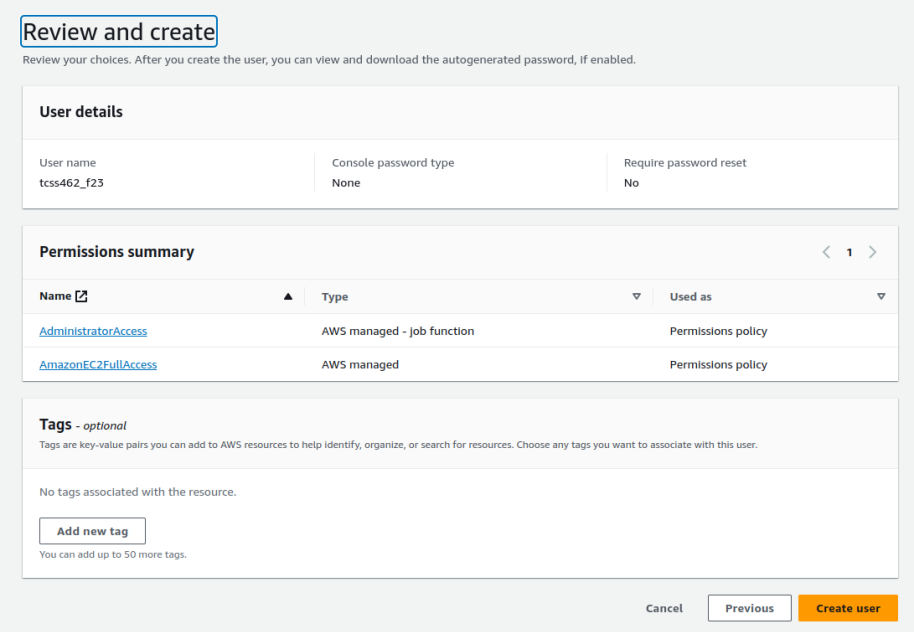
If you plan to use this user account to explore additional Amazon's services, then admin access should be added:

* **AdministratorAccess**

This will allow you, via the CLI, to explore and do just about everything with this AWS account.

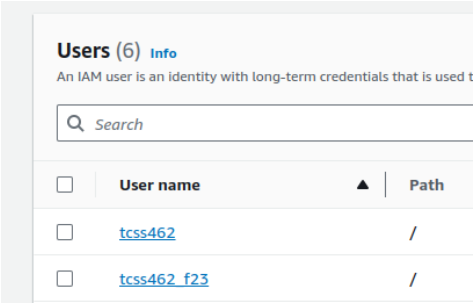
Later in the class you may need to attach additional policies directly to your user account by accessing users under IAM.

Now click the "Next" button.



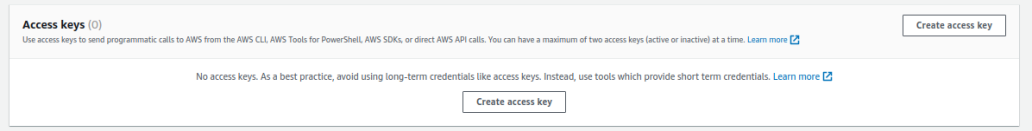
Now review the settings, make sure they are correct, and click "Create user".

Now from the users list, select your newly created user account, here it was called "tcss462_f23":

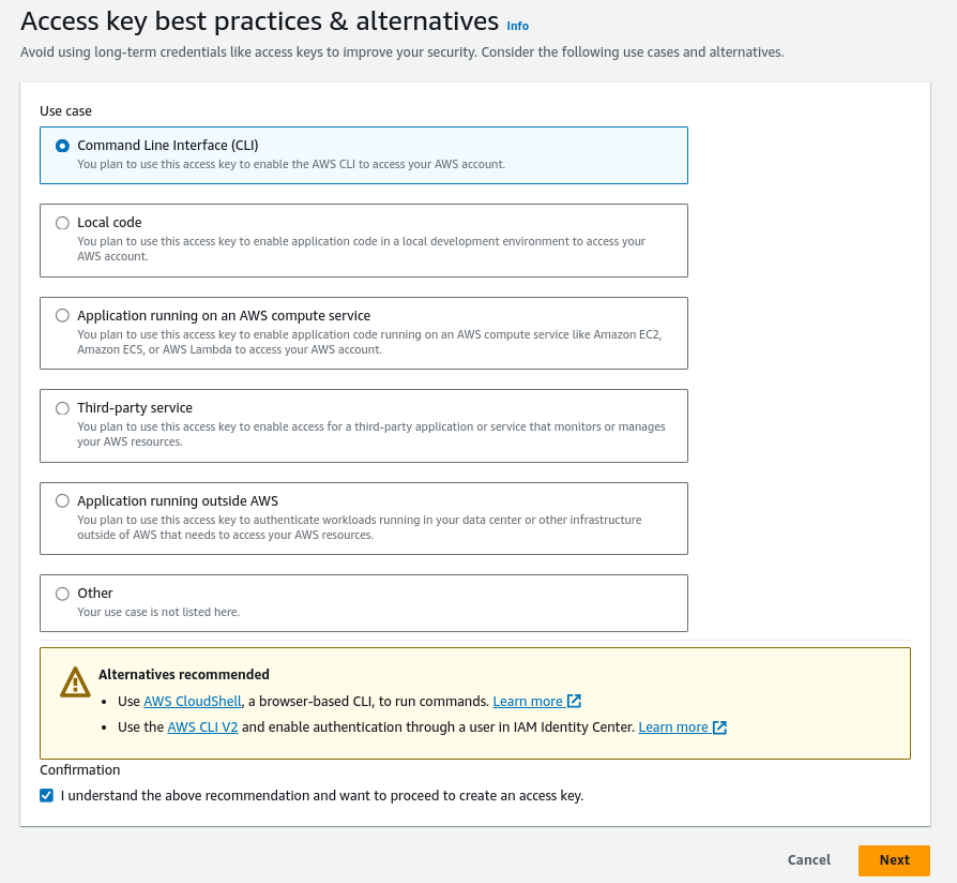


Click on the '**Security Credentials**' tab.

Scroll down to the Access Keys widget:



Click on the 'Create access key" button, and select the checkbox that says "Command Line Interface (CLI)" to proceed to create an access key.



Check the box for "I understand the above recommendation and want to proceed to create an access key."

Why are we ignoring the advice? For Ubuntu 22.04/24.04 LTS, we will configure the AWS CLI V2 to access your AWS account using access keys because it is very straightforward, and it does not require updating the keys throughout the quarter. If you wish to update keys more frequently, or access the CLI using alternative security mechanisms, please check out the article:
https://docs.aws.amazon.com/cli/latest/userguide/cli-configure-sso.html

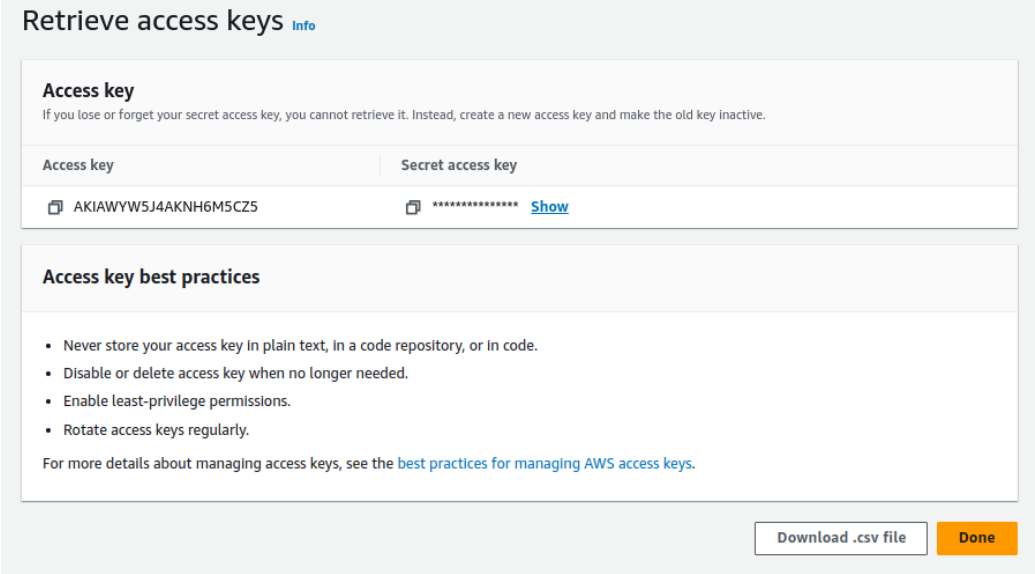
Proceed to press "Next".

The description tag is optional and can be skipped.;

Proceed to press “Create access key”

There is one, and only one opportunity to download your Access key and Secret access key pairs.
You can press the **Show** button and copy and paste the key somewhere safe, or download the .csv file.
If you fail to download or copy the key values now, they will be lost forever, and this process will need to be repeated.

The keys must be copied, or the .csv file download to save the values:



Once you’ve downloaded these keys, be sure to **never** publish these key values in a source code repository such as github where your account credentials could be exposed. **Protect these keys as if they were your credit card or wallet!**

Task 3 – Install and Configure the AWS Command Line Interface (CLI)

On your Ubuntu machine, after obtaining your access key and secret key, install the AWS command line interface:

```
sudo snap install aws-cli --classic
```

After installing, configure the CLI to use your credentials using “aws configure”.
Provide your access key and secret key from Task 2.
Specify “us-east-2” (Ohio) as the default region.
Leave the default output as none. Most output will be returned in JSON format.

```
$ aws configure
AWS Access Key ID [None]: XXXXXXXXXXXXXXXXXXX
AWS Secret Access Key [None]: XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
Default region name [None]: us-east-2
Default output format [None]:json
```

Common output formats are 'json' and 'text'. If you'd like to test them, just re-run the 'aws configure' command. 'text' mode output is more concise, while 'json' is verbose. Once done experimenting, **choose 'json'** as the output format.

***** FOR THIS COURSE, USE "json" as the default output format for the AWS CLI. *****

Failure to use json, may result in error messages in other tutorials.

Check the version of the AWS CLI that's been installed:

```
#value shown is for Ubuntu 24.04
$ aws --version
aws-cli/2.31.4 Python/3.13.7 Linux/6.11.0-26-generic exe/x86_64.ubuntu.24
```

This version may be different (such as 1.22.xx) if using Ubuntu 22.04.
Now try inspecting the available AWS CLI commands:

```
$ aws help
```

Now try lists the default Virtual Private Clouds (VPCs) that are preconfigured in your account to provide networking for virtual machines:

```
$ aws ec2 describe-vpcs
```

Once launching a virtual machine in Tutorial #3, you can inspect any running virtual machines from the Ubuntu command line with the command:

```
$ aws ec2 describe-instances
```

Document History:
v.10 Initial version

Related AWS Article:
https://docs.aws.amazon.com/cli/latest/userguide/cli-chap-getting-started.html