Tao Hu

Professor: Jun Li

CS 381

2/20/2023

Project 0

For non image version:

https://github.com/Talen-520/Cloud-Computing/blob/main/README.md

Installation and preparation

Following instuction is done by ubuntu(Linux)

AWS EC2 installation with your system:

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

Command:

curl "https://awscli.amazonaws.com/awscli-exe-linux-x86_64.zip" -o "awscliv2.zip"

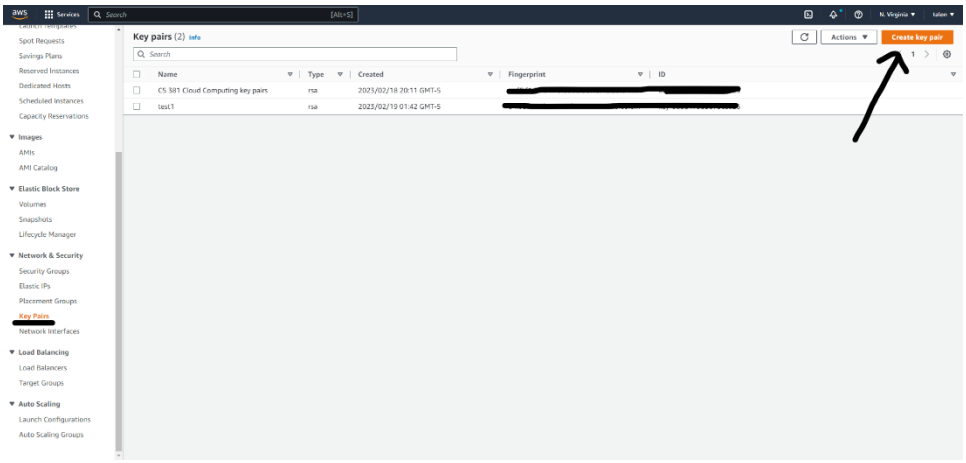
unzip awscliv2.zip

sudo ./aws/install

After above command, here is result:

Key pair:

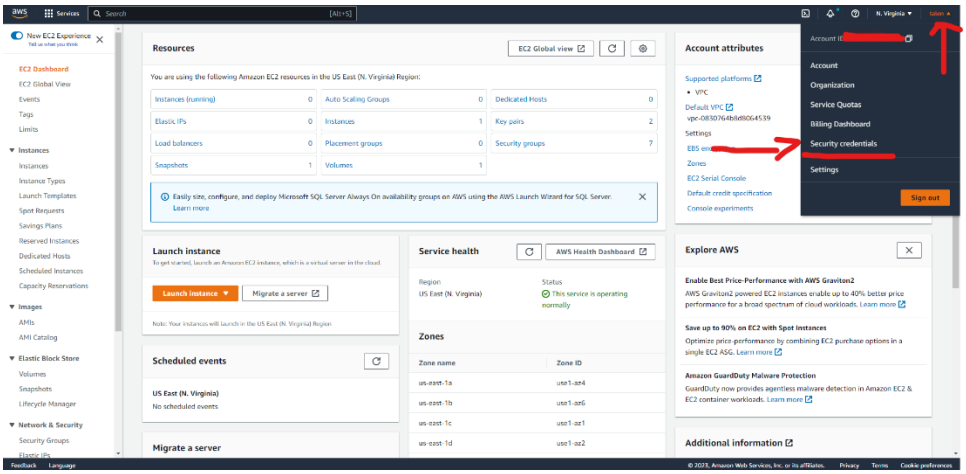
after sign in your account, click service at left top bar, select compute at left bar then click EC2(or just search EC2 on search bar) under network security -> key pairs create a key and download it

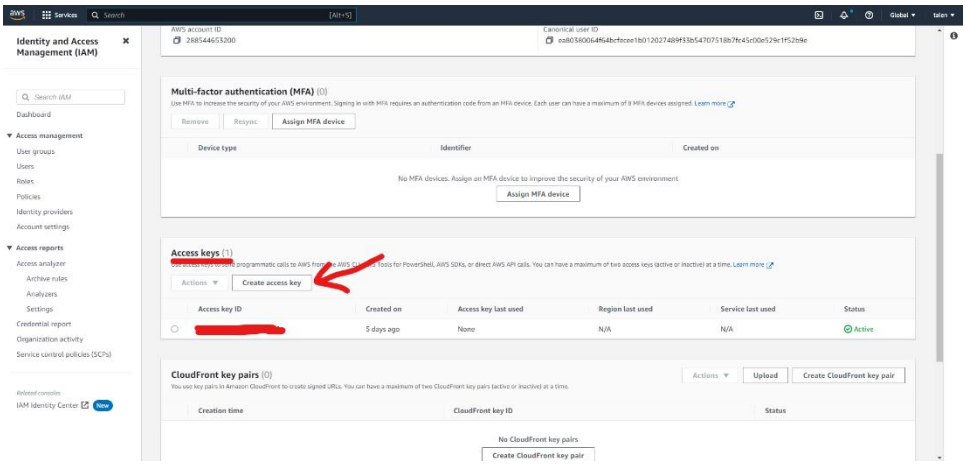


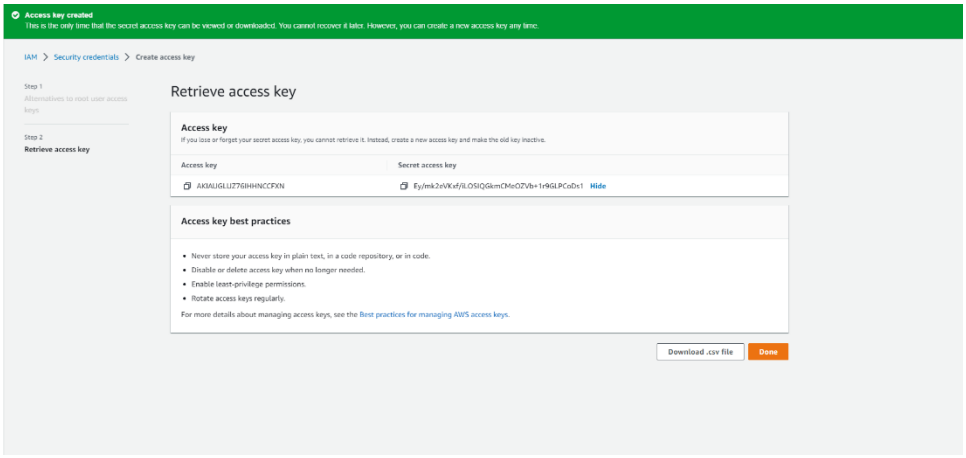
Access key:

click your account icon at right top: it shows Account ID, setting, Organization etc...

select security credentials -> scroll download find access key option, create one you need and save it in somewhere







Note: you may need enter -O -W your access key every command

Do not expose your access key online such as github, this action cause AWS to restrict the functionality of your account

after you create access key

Confirgure setup

command: aws configure

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

Access key:

Secret access key:

Region: us-east-1

Format: json

```
tao727188712@DESKTOP-IBM4J8C:~$ aws configure
AWS Access Key ID [****************NE5Y]: AKIAUGLUZ76IHHNCCFXN
AWS Secret Access Key [****************1Ssd]: Ey/mk2eVKxf/iLOSIQGkmCMeOZVb+1r9GLPCoDs1
Default region name [us-east-1]: us-east-1
Default output format [json]: json
```

in Linux follwing Test your environment by running ec2-describe-regions command

ec2-describe-regions -O [access key] -W [secret key]

output be like:

```
tao727188712@DESKTOP-IBM4J8C:~$ ec2-describe-regions -O AKIAUGLUZ76IHHNCCFXN -W Ey/mk2eVKxf/iLOSIQGkmCMeOZVb+1r9GLPCoDs1

REGION  ap-south-1      ec2.ap-south-1.amazonaws.com
REGION  eu-north-1      ec2.eu-north-1.amazonaws.com
REGION  eu-west-3       ec2.eu-west-3.amazonaws.com
REGION  eu-west-2       ec2.eu-west-2.amazonaws.com
REGION  eu-west-1       ec2.eu-west-1.amazonaws.com
REGION  ap-northeast-3  ec2.ap-northeast-3.amazonaws.com
REGION  ap-northeast-2  ec2.ap-northeast-2.amazonaws.com
REGION  ap-northeast-1  ec2.ap-northeast-1.amazonaws.com
REGION  ca-central-1    ec2.ca-central-1.amazonaws.com
REGION  sa-east-1       ec2.sa-east-1.amazonaws.com
REGION  ap-southeast-1  ec2.ap-southeast-1.amazonaws.com
REGION  ap-southeast-2  ec2.ap-southeast-2.amazonaws.com
REGION  eu-central-1    ec2.eu-central-1.amazonaws.com
REGION  us-east-1       ec2.us-east-1.amazonaws.com
REGION  us-east-2       ec2.us-east-2.amazonaws.com
REGION  us-west-1       ec2.us-west-1.amazonaws.com
REGION  us-west-2       ec2.us-west-2.amazonaws.com
```

Create instance:

ec2-run-instances ami-22ce4934 -O [access key] -W [secret key] -t t2.micro -k [key pair]

//-t is instance type, bigger type will cost money -k is key pair for more information go to web

version EC2

For more details:

https://docs.aws.amazon.com/cli/latest/userguide/cli-services-ec2-instances.html

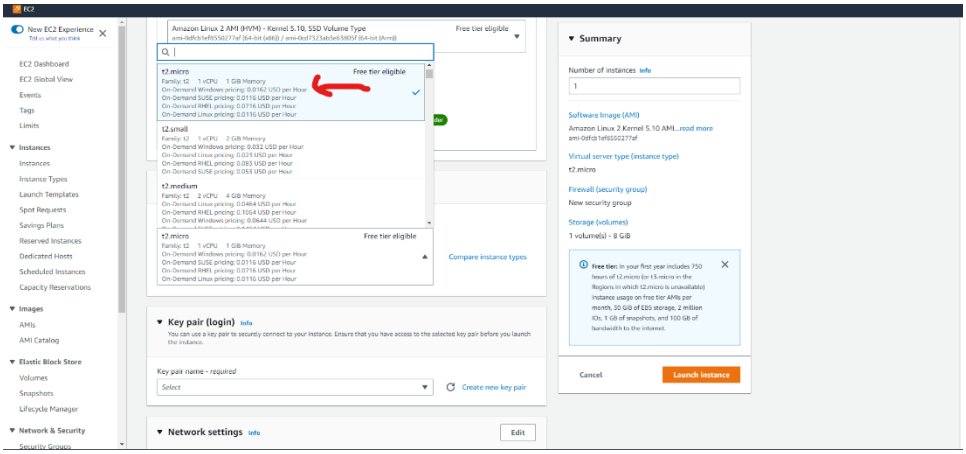
$ aws ec2 run-instances --image-id *ami-xxxxxxxx* --count 1 --instance-type t2.micro --key-name *MyKeyPair* --security-group-ids *sg-903004f8* --subnet-id *subnet-6e7f829e*

Syntax with tag:

```
aws ec2 run-instances \
    --image-id ami-abc12345 \
    --count 1 \
    --instance-type t2.micro \
    --key-name MyKeyPair \
    --subnet-id subnet-6e7f829e \
        --tag-specifications
```

Example to create tags, you don’t have to enter all command, some of them are optional:

aws ec2 create-tags –-resource [instance ID] –-tags Key=Name,Value=[tagname]



Check instance information:

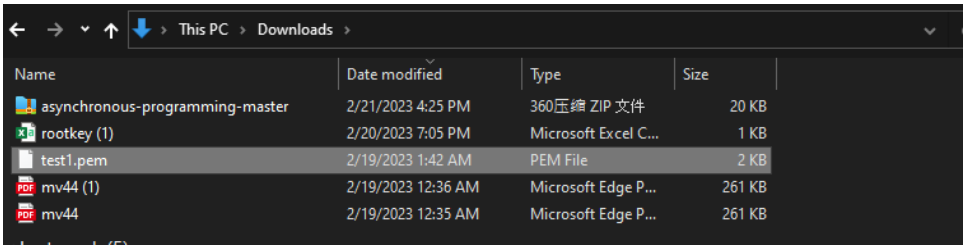
ec2-describe-regions [your instance id] -O [access key] -W [secret key]

ssh into the newly created instance:

chmod 400 [key location]

example: chmod 400 /mnt/c/Users/Owner/Downloads/test1.pem

Here is my key location



ssh -i /path/key-pair-name.pem instance-user-name@instance-IPv6-address

example: ssh -i /mnt/c/Users/Owner/Downloads/test1.pem EC2-user1@ec2-18-234-79-69.compute-1.amazonaws.com

//you many need setup username first for your instance

Install an application:

You can install software on ec2 instances just like on any other linux machine, e.g.:

To install a package from a repository

[ec2-user ~]$ **sudo yum install links**

To install RPM package files that you have downloaded

[ec2-user ~]$ **sudo yum install *my-package*.rpm**

yum install -y perl emacs

docs reference:

https://docs.aws.amazon.com/AWSEC2/latest/UserGuide/install-software.html

Create image:

ec2-create-image [instance id] -n [a image name] -O [access key] -W [secret key] this will return an customized ami id, note it down example output: ami-06744560fd4ad78ad

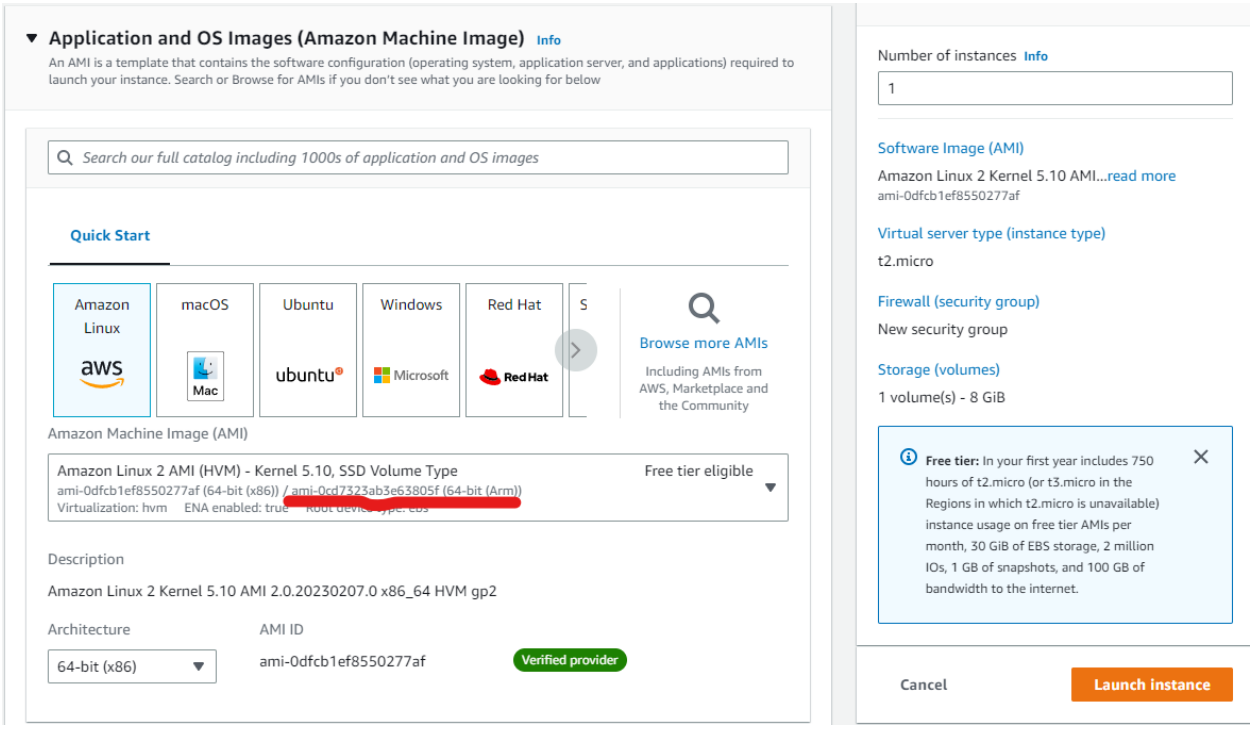
Create an instance of this new image and terminate all your instances -- record time of each operation: ec2-terminate-instances [instance-id]

Now you can start another instance from your customized AMI!

ec2-run-instances new-ami-id -k [key] -t [instance type] -O [access key] -W [secret key]

example: ec2-run-instances ami-06744560fd4ad78ad -k test1.pem -t t2.micro

You can check avaiable ami ID right here:



Cleaning up…

deregister your newly created AMI by:

1. Deregister the AMI

   Deregister the AMI using the deregister-image command:

```
aws ec2 deregister-image --image-id ami-12345678
```

Or

Aws ec2-deregister ami-id-here

example**: aws ec2-deregister** ami-06744560fd4ad78ad

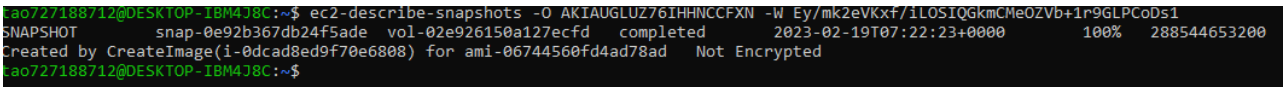
aws ec2-describe-snapshots | grep ami-06744560fd4ad78ad

docs reference:

https://docs.aws.amazon.com/AWSEC2/latest/UserGuide/deregister-ami.html

example: ec2-describe-snapshots -O [access key] -W [secret key]

| grep ami-06744560fd4ad78ad



2. Snapshot ID above is snap-0e92b367db24f5ade

Then we delete it by command

```
ec2-delete-snapshot snap-beba4fd
```

docs reference:
https://docs.aws.amazon.com/cli/latest/reference/ec2/delete-snapshot.html#examples

1. Terminate instances (Optional)

   If you are finished with an instance that you launched from the AMI, you can terminate it by using the terminate-instances command:

```
aws ec2 terminate-instances --instance-ids i-12345678
```

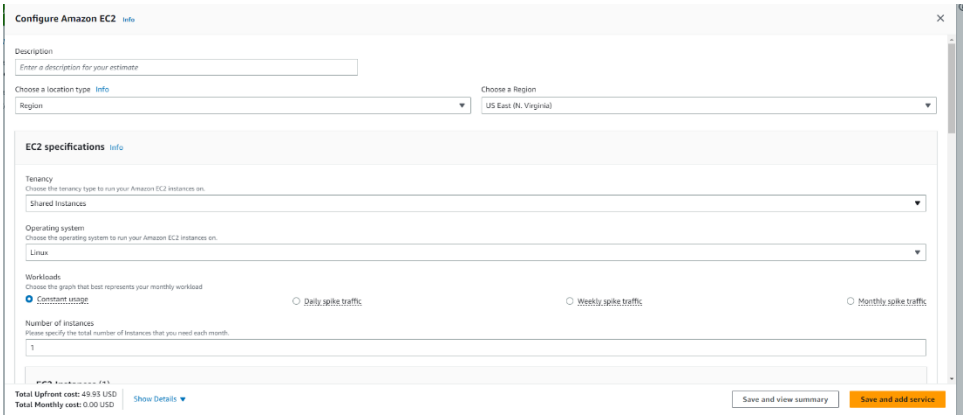
Cost:

AWS Cost Calculator base on my instance type

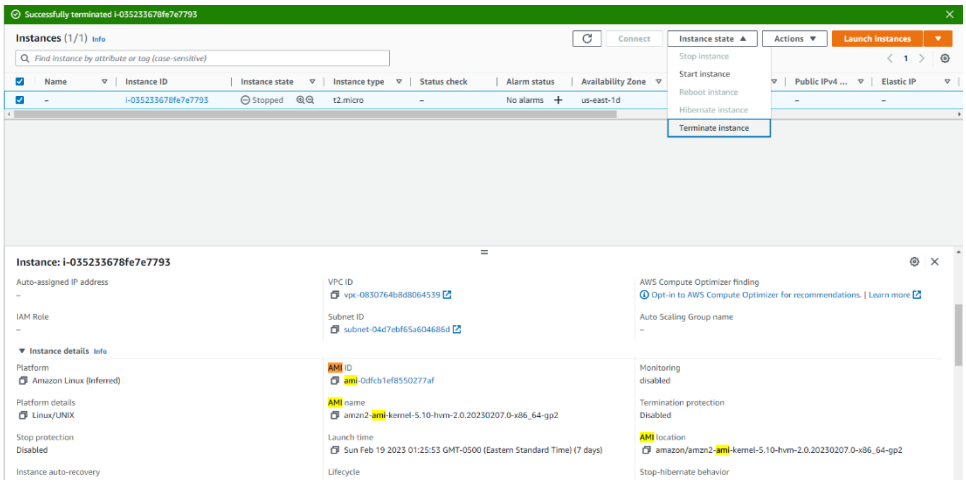
https://aws.amazon.com/ec2/pricing/

The cost per hour is

0.0116



Don’t forgot terminate your unused instance:



I forgot to terminate it so it charge me 16 hours.

Go to your billing dashboard by clicking account