# Face-Detection App Project on AWS

#### SRIDHARAM SRIKANTH

Note:- the-sri-sri is my genuine account name for this project please consider it.

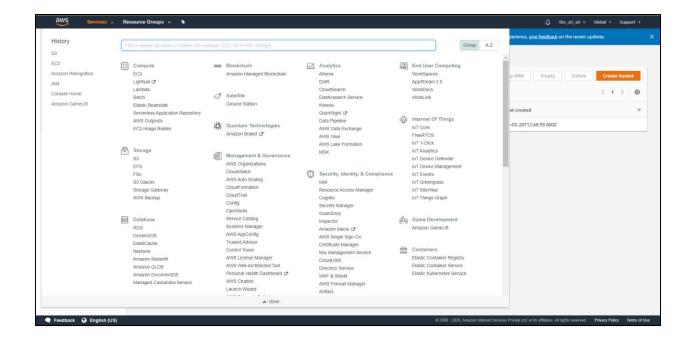
This projects contains several steps including screenshots for the respective steps.

- STEP 1: Log in to Amazon AWS and dashboard.
- STEP 2: Creating EC2 instance.
- STEP 3: Connecting to EC2 instance using PuTTY.
- STEP 4: Creating S3 bucket.
- STEP 5: Connecting S3 to EC2 and uploading Objects to S3.
- STEP 6: Tour to AWS rekognition services.
- STEP 7:-: Using AWS Rekognition from EC2.

**Step 1 :** - <u>log in to</u> the Amazon AWS services with your Root user Email and password after activating <u>your Amazon AWS account.</u>



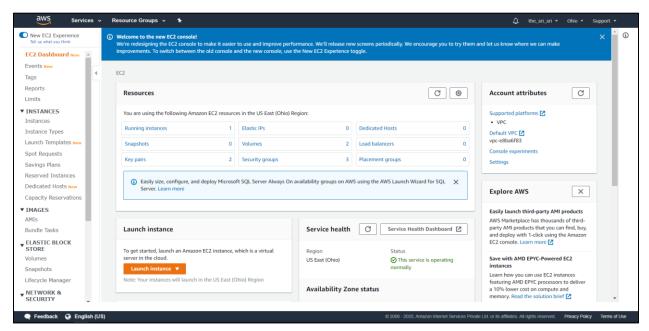
After logging in the <u>dashboard</u> of the services provided by Amazon AWS will be presented as below partitioned by their service .



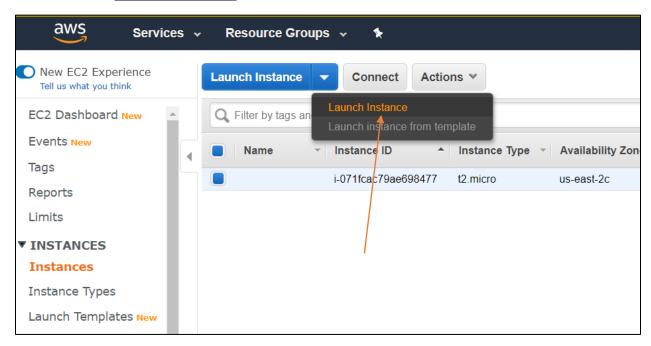
**STEP 2:** - create an EC2 instance . follow the steps under given to create an EC2 instance .

Note: - here second instance has been created for demonstration purpose.

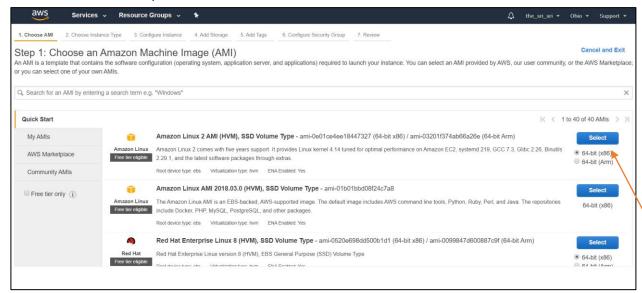
### EC2 dashboard



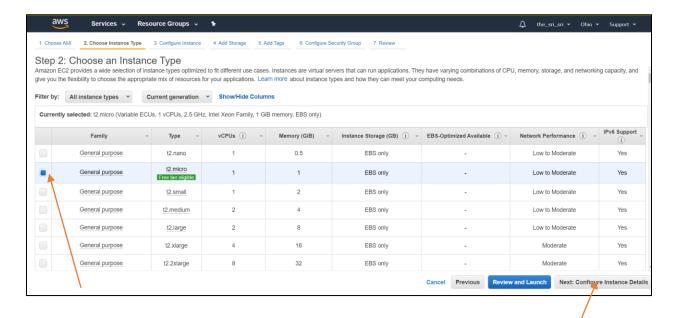
• select Launch instance under launch instance button .



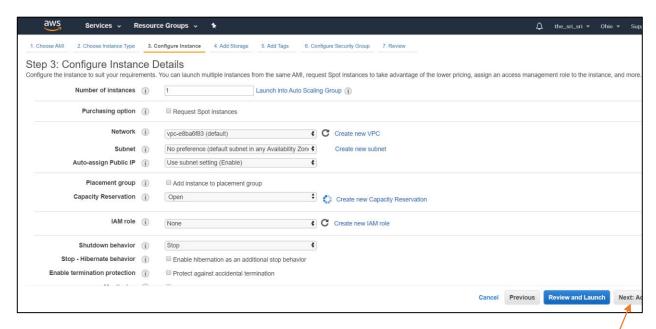
Select an <u>Operating System</u> to work upon (here we have selected **Amazon** Linux 2 Ami )



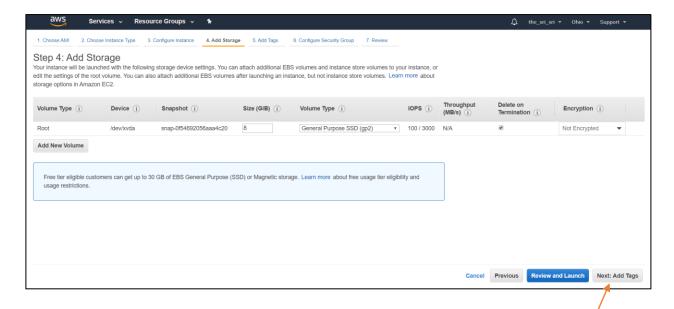
 Select required Instance type i.e. Type & No. of CPU, Memory needed based on your project needs. (for this project we have selected t2.micro)
 Now click Next.



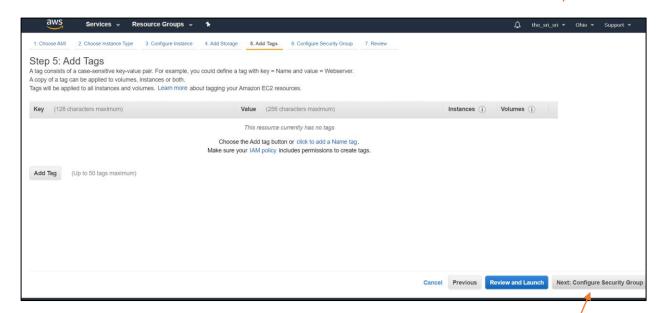
 Now Configure your Subnets in this step according to your needs (we haven't done any changes as per our project) click next.



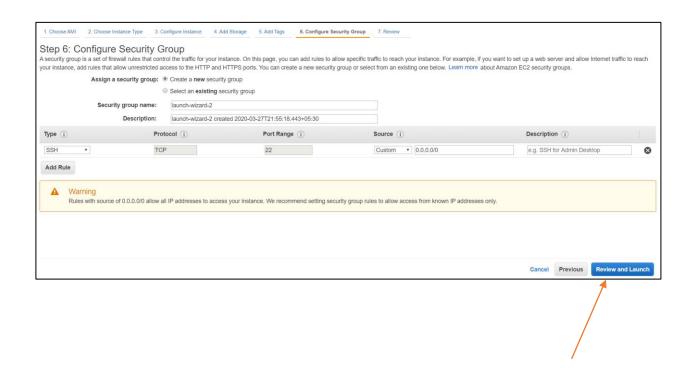
• Add Storage Details i.e. size of storage you need for your project (By default its 8GiB we haven't done any changes ) click Next.



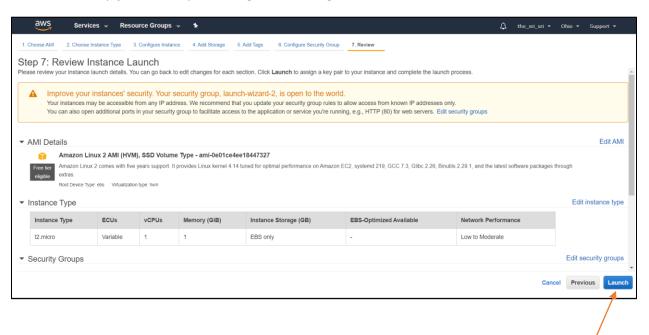
here we haven't added any tags for our EC2 instance just click NEXT,



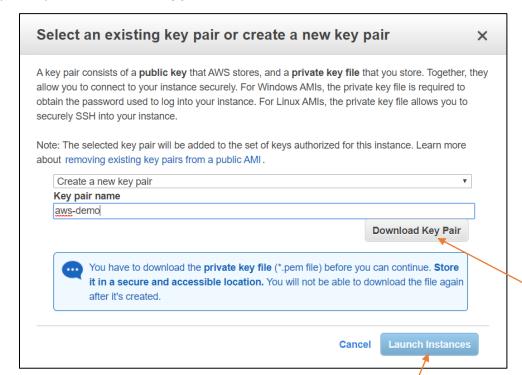
Configure your security group according to the Type of EC2 we have created .(we have created
 SSH type i.e. Linux based OS and for that port No. is 22) click PREVIEW & LAUNCH.



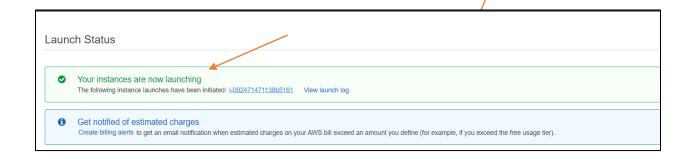
• In this step **preview** all your **changes and configurations** for confirmation and then click **launch**.



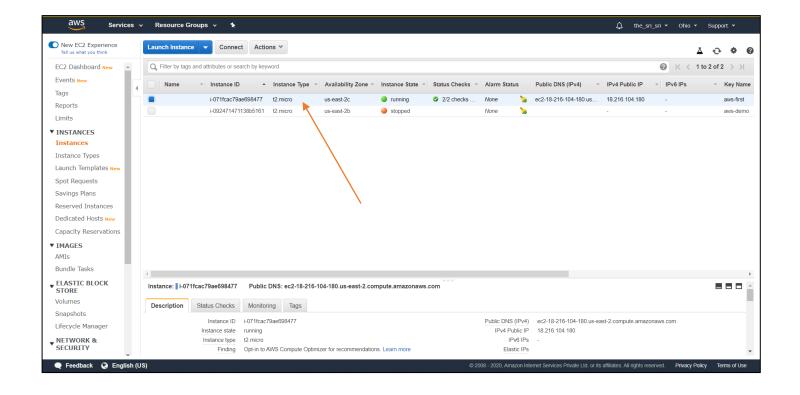
• On clicking **LAUNCH** a dialogue box will appear for generating private Key for the instance. Select **Create a new key Pair** option from the **drop down** and provide **a name** of your choice for your key . then **download key pair** and select **launch instance**.



the Final Launch status for your EC2 instance will be like this.



The instances you create will be displayed on the dashboard of EC2.



### **STEP 3 : -** Connecting to **EC2 instance** using **PuTTY**.

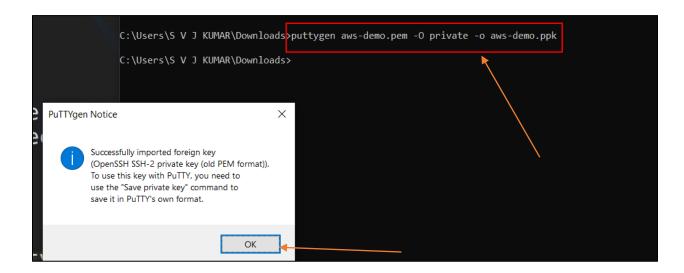
Now that we have created EC2 instance we should be connecting to this Instance using **PuTTY**.

### Why PuTTY?

We have created our instance on Linux based OS, to communicate with that Linux based Instance we need an external application s\w i.e. PuTTY.

PuTTY is available for all the OS (MAC OS, WIN, Linux etc. ) you should be downloading the software according to your base OS of the system you are using to connect to the Instance based on Linux OS.

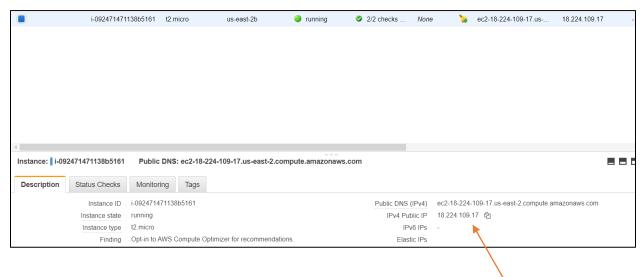
In the process of launching our instance we have downloaded a **Key file** which is in .pem format and for this key file to be used with PuTTY we need to convert is to .pmk format, we will be doing this using **keygen** command in our windows **CMD prompt** .



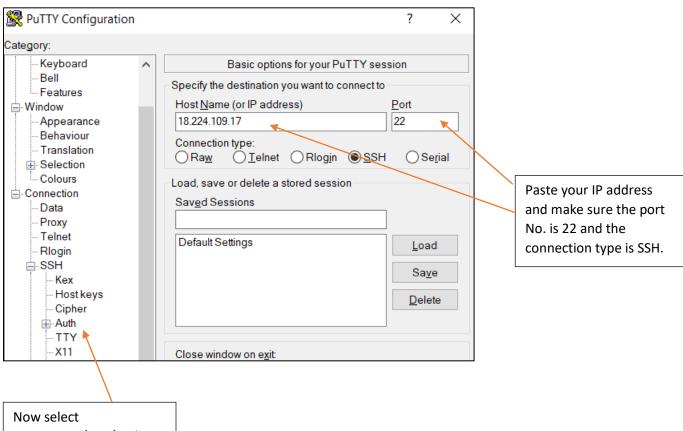
Type the **highlighted command** in the cmd prompt and click ok to get .ppk format of your **key file** .

After downloading and installing the PuTTY launch it .

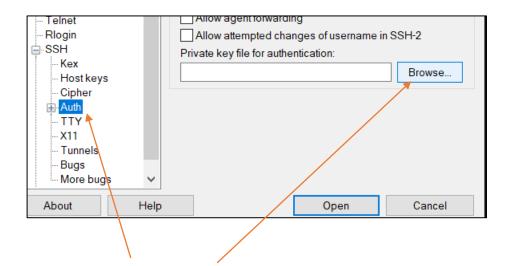
Copy the public IP address of your instance from the EC2 instance dashboard.



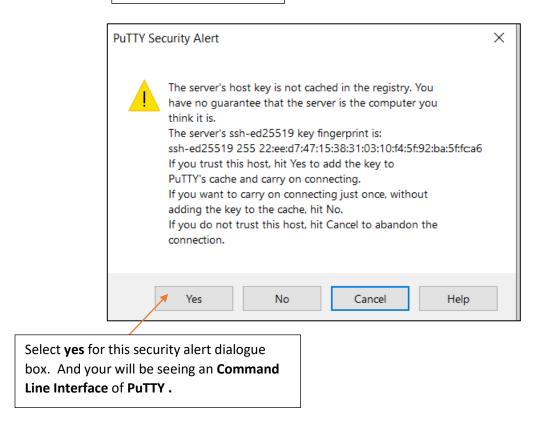
### And paste it on the PuTTY Configuration GUI.



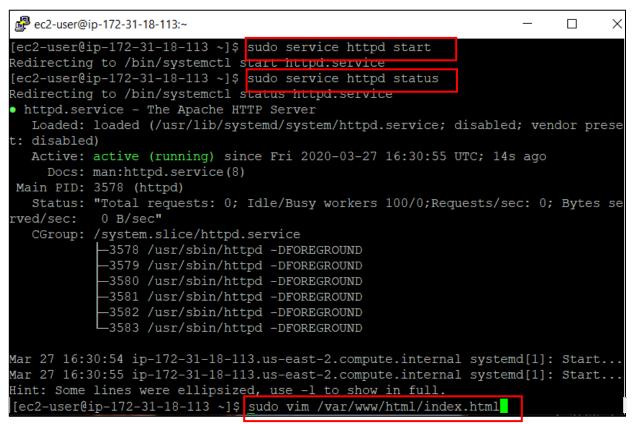
Now select Connection/SSH/auth From the path tree on the left side

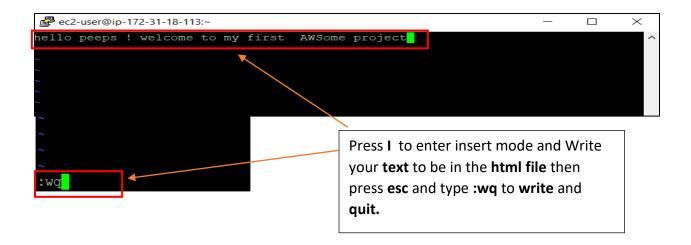


Under Auth Browse open your .ppk file of private key file and click Open.



Type the sequence of commands in the command line interface of **PuTTY to** connect to **EC2 instance** .

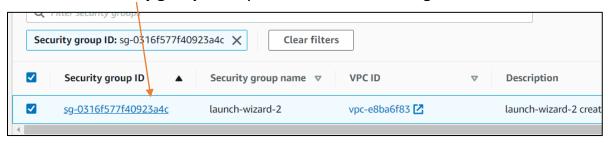




Now go back to the **EC2 instance dashboard** and **select your instance** before selecting **launch-wizards-2** from the **security groups** tag.



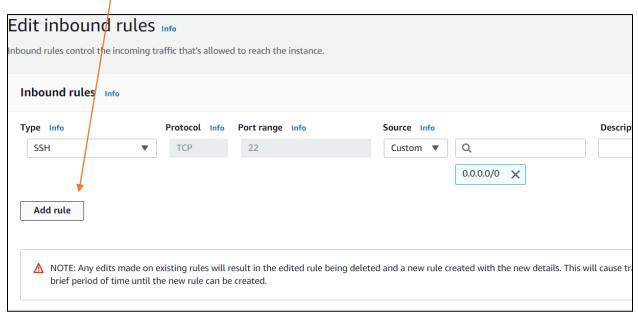
now select security group id of your instance from the given list of ids

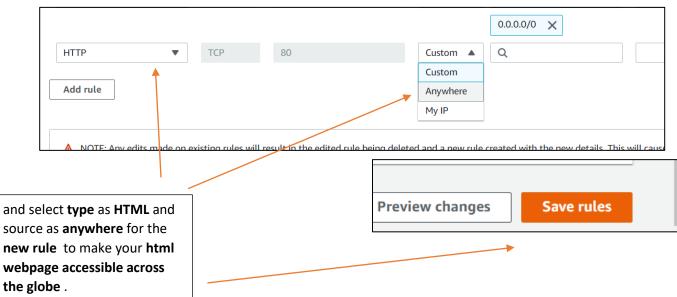


#### now select Edit inbound rules.



### now press Add Rules button





now search for your **IP address** in your **web browser** and watch your static **web page** on the internet **live.** 

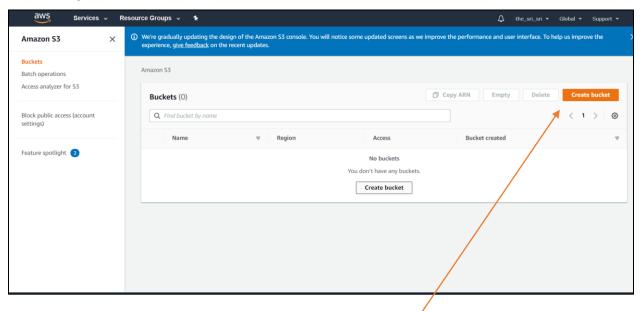


### **STEP 4 : -** Creating S3 bucket.

Buckets in S3 are the collection of objects (every file i.e. .jpg , .pdf,.html, .docx etc. is treated as an object in S3) with unique IDs.

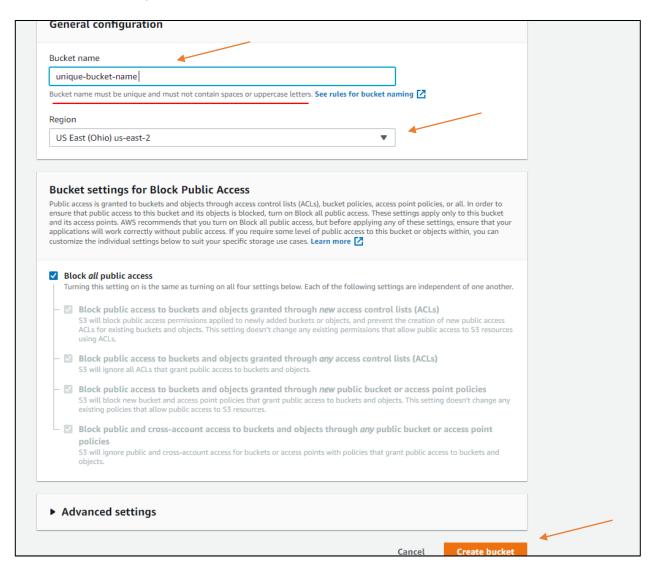
Buckets do not have any region it agrees to be global unlike the objects in the bucket which are accessible from specified region only .

The under given is the Dashboard of AWS S3.

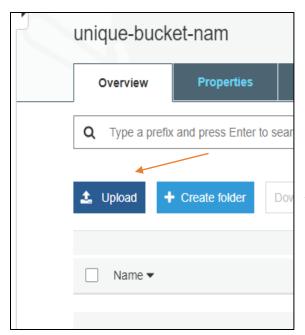


To create your first bucket start your steps by clicking the "Create Bucket" button on the right corner of the Dashboard.

**Bucket's name** is **Unique** in nature, as it is shown globally, to recognize It in uniquely one must provide a unique name to the bucket. Then select **region** for your bucket because (The user interface shows all your buckets, in all regions. But buckets exist in a specific region and you need to specify that region when you create a bucket.) and select **'create bucket'**.



To upload your files into bucket click the **"upload"** button on the right side of the **GUI** 



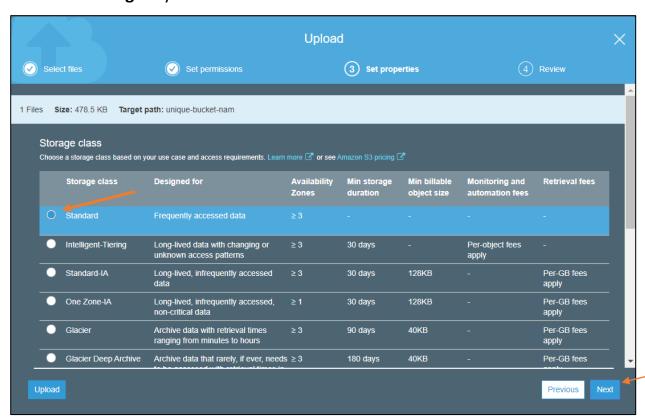
Or you can create **folder** to make **collections** of your **objects**.

Then drag drop or select your **object** using file selector from the local disk and then press **next**.

The on the next step toggle access permission of your file as per your need and click "Next".

The "Properties" lets you select the type of storage class you want for your data/ file.

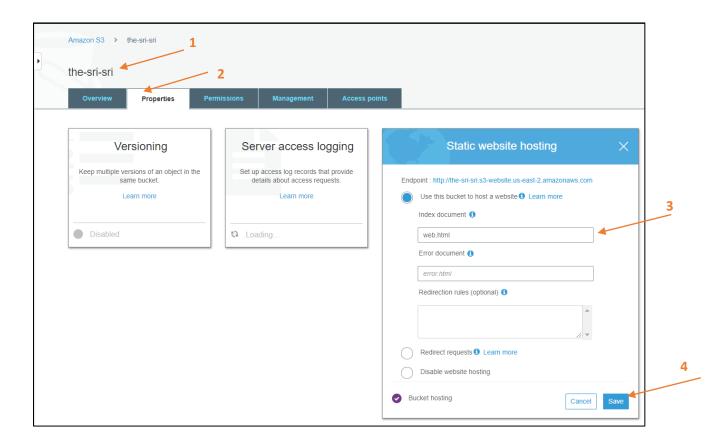
**1.** Standard : Data **accessed frequently** are stored in all the **Availability zones** of the **region** you selected earlier.

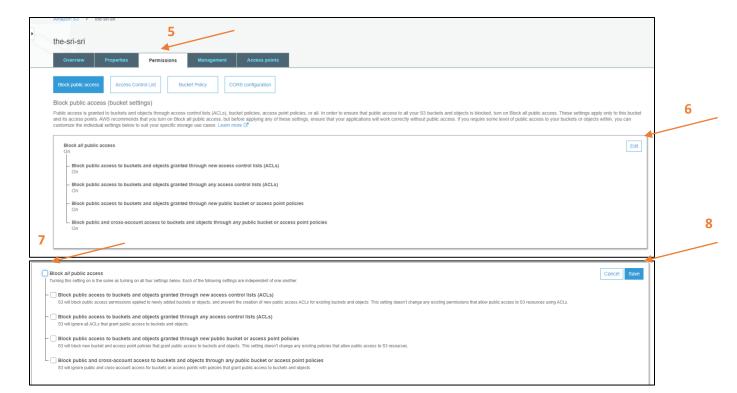


- **2.** Intelligent-tiering : for the data to be accessed with unknown patterns . but critical / Important.
- **3.** Standard-IA: data to be stored for a long time, infrequently accessed, and non-critical.
- **4.** Glacier: archived data, very rarely accessed, takes more time for retrieval.
- **5.** Glaciers Deep Archive : archived data takes more time for retrieval but kept for 2X days than Glaciers class.

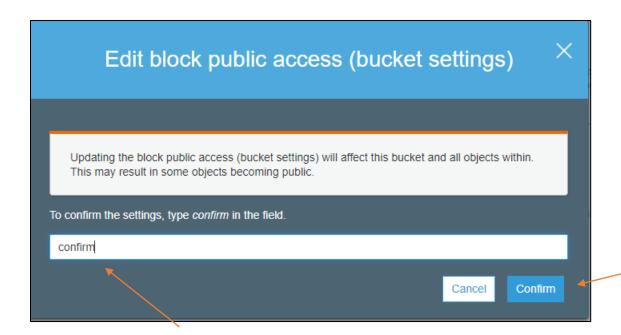
### Follow under given steps to Host your file to the web.

- 1. Select your bucket.
- 2. Select Properties tab.
- 3. Select Static web hosting box. Name your file
- 4. and click save.
- 5. select **Permissions** tab.
- 6. and select the edit option
- 7. and toggle on to off.
- 8. Click save

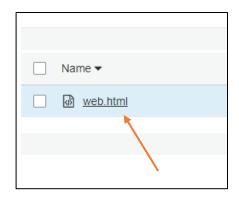


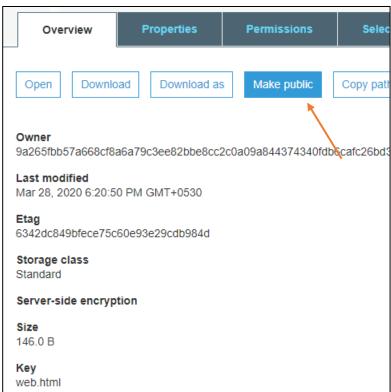


9. Type "Confirm" in the dialogue box appeared and press confirm.



10. Select the **file** you want to make public and the click on **"Make Public"** tab.



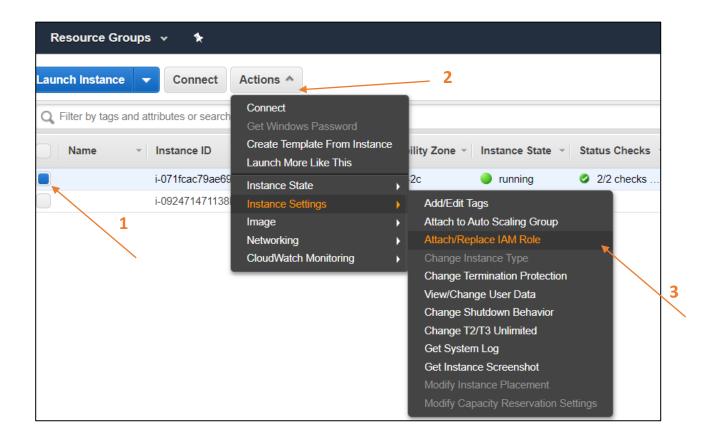


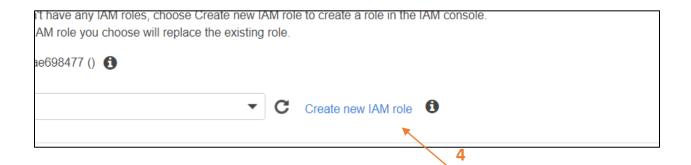


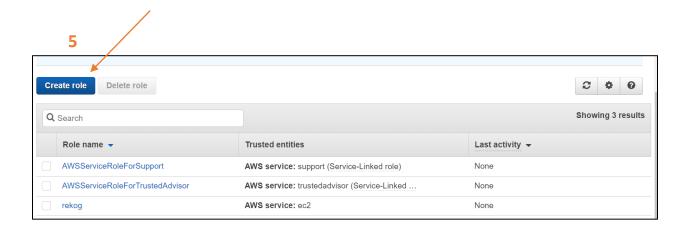
### STEP 5: - Connecting S3 to EC2 and uploading Objects to S3

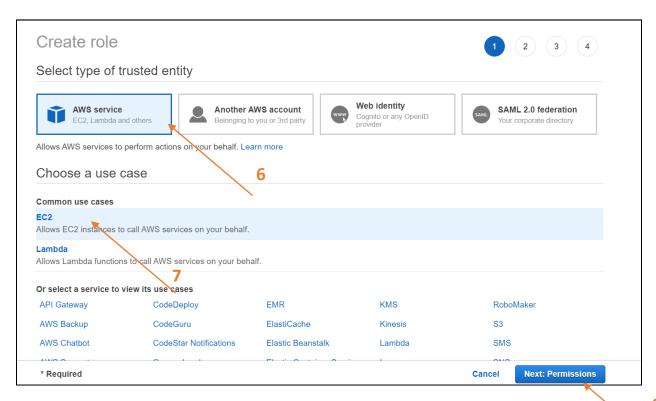
### Create IAM Role.

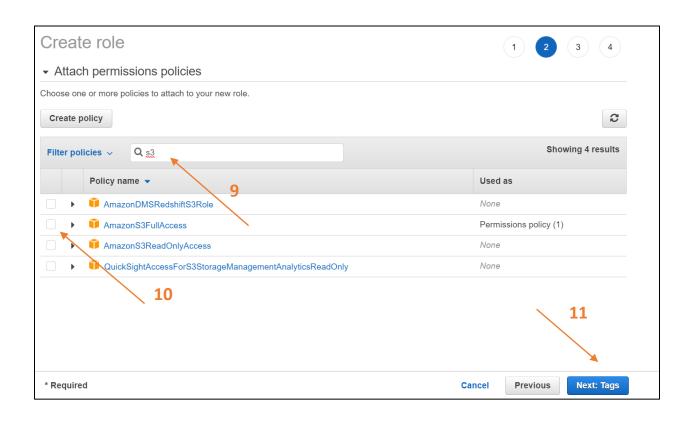
Select your EC2 instance and then follow bellow illustrated steps.

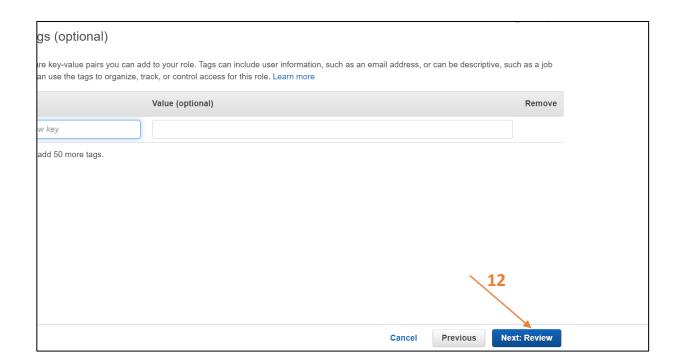


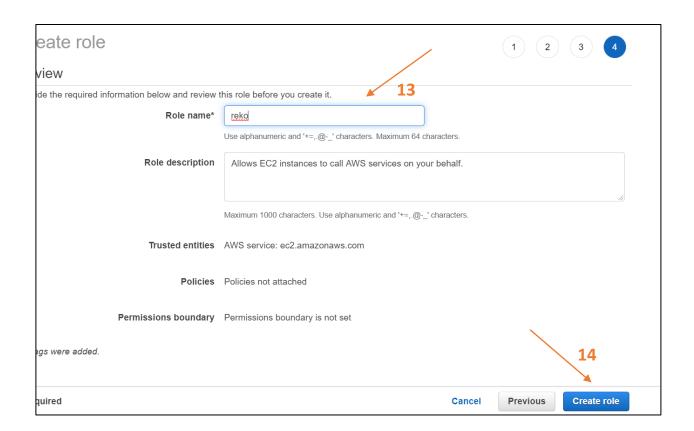












Go to Attach / Replace IAM Role page after selecting your EC2 instance.



Open PuTTY and connect to EC2 and follow these below given steps to down a file from web and upload it to S3 through EC2 instance.

```
ec2-user@ip-172-31-44-120:~
                                                                        X
💤 login as: ec2-user
 Authenticating with public key "imported-openssh-key"
Last login: Fri Mar 27 18:14:51 2020 from 27.62.203.49
                    Amazon Linux 2 AMI
nttps://aws.amazon.com/amazon-linux-2/
 package(s) needed for security, out of 7 available
Run "sudo yum update" to apply all updates.
[ec2-user@ip-172-31-44-120 ~]$ sudo yum install httpd
Loaded plugins: extras suggestions, langpacks, priorities, update-motd
?ackage httpd-2.4.41-1.amzn2.0.1.x86 64 already installed and latest version
Nothing to do
[ec2-user@ip-172-31-44-120 ~]$ sudo yum install php
oaded plugins: extras suggestions, langpacks, priorities, update-motd
Resolving Dependencies
-> Running transaction check
--> Package php.x86 64 0:5.4.16-46.amzn2.0.2 will be installed
 php-common.x86 64 0:5.4.16-46.amzn2.0.2
Complete!
[ec2-user@ip-172-31-44-120 ~]$ curl -sS https://getcomposer.org/installer | php
All settings correct for using composer
Downloading...
Composer (version 1.10.1) successfully installed to: /home/ec2-user/composer.pha
Use it: php composer.phar
[ec2_user@in_172_31_44_120 ~15
https://aws.amazon.com/amazon-linux-2/
1 package(s) needed for security, out of 7 available
Run "sudo yum update" to apply all updates.
[ec2-user@ip-172-31-44-120 ~]$ cd /var/www/html
[ec2-user@ip-172-31-44-120 html]$ cd face
-bash: cd: face: No such file or directory
[ec2-user@ip-172-31-44-120 html]$ sudo mkdir face ◀
[ec2-user@ip-172-31-44-120 html]$ cd face 🤜
[ec2-user@ip-172-31-44-120 face]$ pwd
/var/www/html/face
[ec2-user@ip-172-31-44-120 face]$ sudo php -d memory limit=-1 ~/composer.phar re
quire aws/aws-sdk-php
Using version ^2.8 for aws/aws-sdk-php
Updating dependencies (including require-dev)
  - Installing symfony/event-dispatcher (v2.8.52): Downloading (100%)
    proc open(): fork failed - Cannot allocate memory
    The archive may contain identical file names with different capitalization
which fails on case insensitive filesystems)
```

```
require [--dev] [--prefer-source] [--prefer-dist] [--fixed] [--no-progress] [--no-suggest] [--no-update] [--no-scripts] [--update-no-dev] [--update-with-dependencies] [--update-with-all-dependencies] [--ignore-platform-regs] [--prefer-stable] [--prefer-lowest] [--sort-packages] [-o]--optimize-autoloader] [-a]--classmap-authoritative] [--apcu-autoloader] [--] [<packages>]...

[ec2-user@ip-172-31-44-120 face]$ sudo /bin/dd if=/dev/zero of=/var/swap.1 bs=1M count=1024

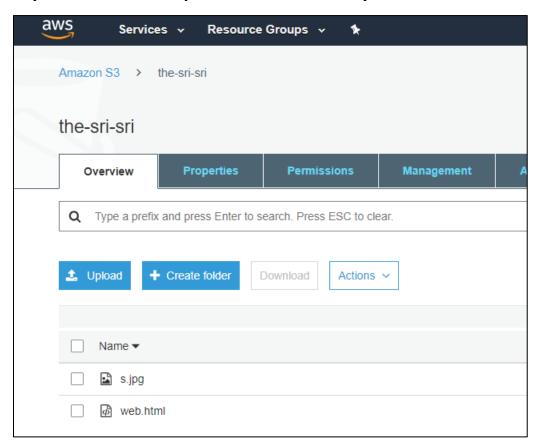
1024+0 records in
1024+0 records out
1073741824 bytes (1.1 GB) copied, 13.3766 s, 80.3 MB/s
[ec2-user@ip-172-31-44-120 face]$ sudo /sbin/mkswap /var/swap.1
mkswap: /var/swap.1: insecure permissions 0644, 0600 suggested.
Setting up swapspace version 1, size = 1024 MiB (1073737728 bytes) no label, UUID=2052b033-ad5c-4e08_bf13-6e1aa794d0c2
[ec2-user@ip-172-31-44-120 face]$ sudo /sbin/swapon /var/swap.1 swapon: /var/swap.1: insecure permissions 0644, 0600 suggested.
[ec2-user@ip-172-31-44-120 face]$
```

#### Sudo wget {link of image to be downloaded}

```
[ec2-user@ip-172-31-44-120 ~]$ ls
b97ea33b5842c7894b804923c6c05580.jpg composer.phar
[ec2-user@ip-172-31-44-120 ~]$ sudo m^C
[ec2-user@ip-172-31-44-120 ~]$ sudo mv b97ea33b5842c7894b804923c6c05580.jpg s.jp
g
[ec2-user@ip-172-31-44-120 ~]$ ls
composer.phar s.jpg
[ec2-user@ip-172-31-44-120 ~]$
```

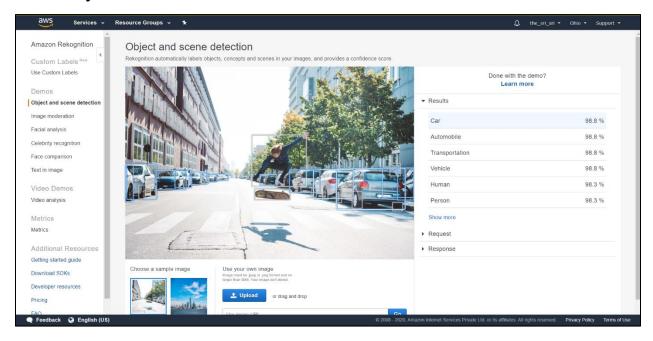
```
ec2-user@ip-172-31-44-120:/var/www/html/face
                                                                        Redirecting to /bin/systemctl start httpd.service
[ec2-user@ip-172-31-44-120 ~]$ cd /var/www/html
[ec2-user@ip-172-31-44-120 html]$ cd face
ec2-user@ip-172-31-44-120 face]$ sudo php -d memory limit=-1 ~/composer.phar re
quire aws/aws-sdk-php
Jsing version ^2.8 for aws/aws-sdk-php
Jpdating dependencies (including require-dev)
Nothing to install or update
Package guzzle/guzzle is abandoned, you should avoid using it. Use guzzlehttp/gu
zle instead.
enerating autoload files
[ec2-user@ip-172-31-44-120 face]$ ls
o97ea33b5842c7894b804923c6c05580.jpg.1 composer.lock s.jpg
                                       index.php team.jpg
composer.json
[ec2-user@ip-172-31-44-120 face]$ sudo php index.php
Image upload done... Here is the URL: https://the-sri-sri.s3.us-east-2.amazonaws
.com/s.jpg[ec2-user@ip-172-31-44-120 face]$
```

#### your file has been uploaded to S3 check in your S3 bucket

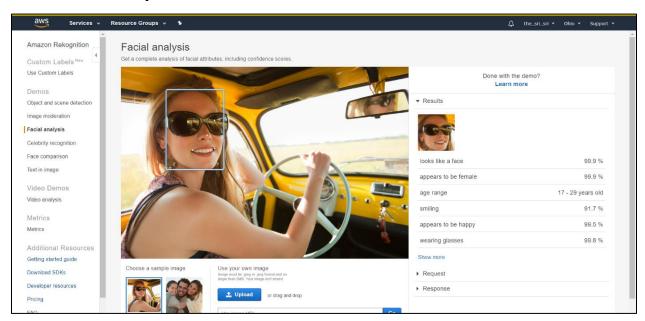


### STEP 6: - A tour to AWS rekognition.

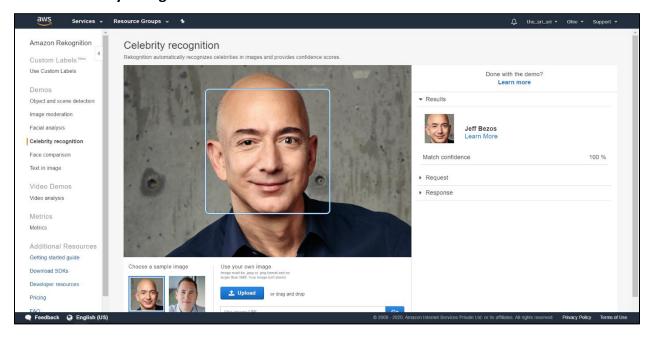
# ✓ Object and scene detection



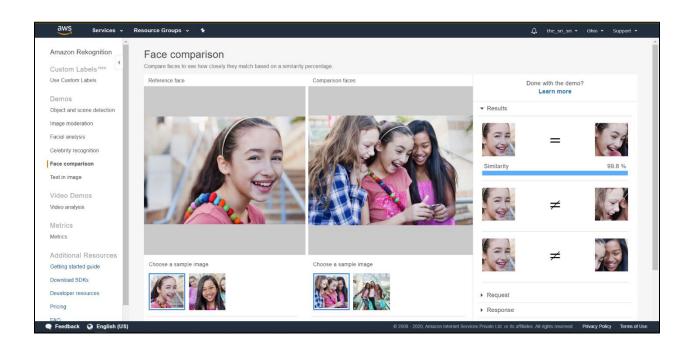
### √ Facial Analysis



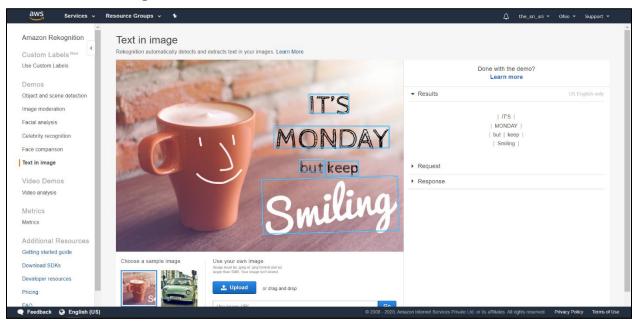
### ✓ Celebrity Recognition



# √ Face comparison



### ✓ Text in image



# **STEP 7:** Using **AWS Rekognition**.

## input Image:-



#### Output:-

