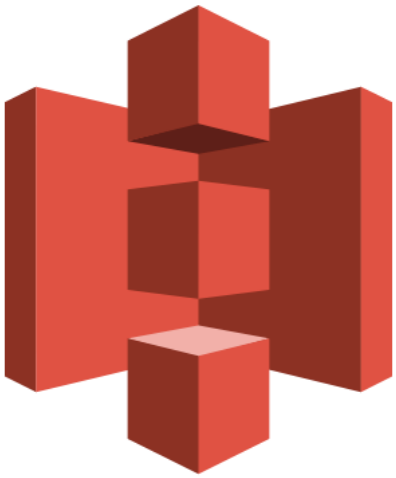
AMAZON S3



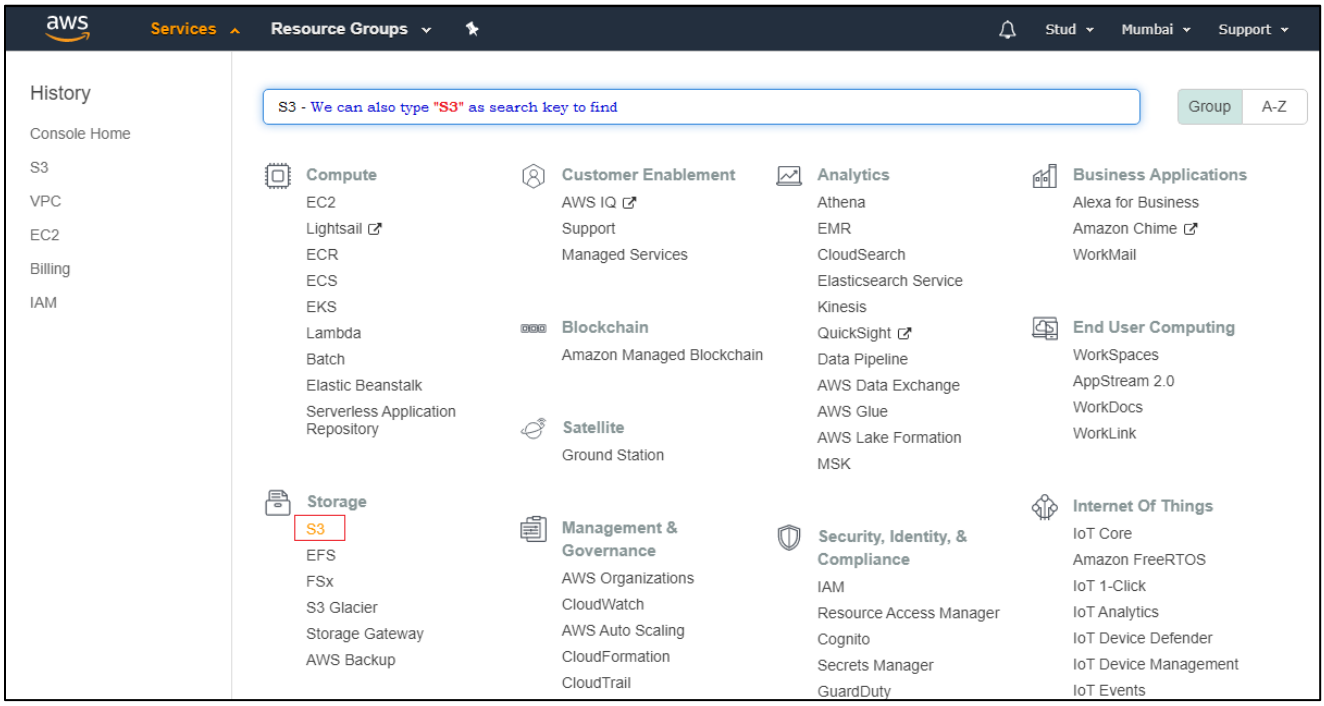
Simple Storage Solution

Suhail Ahamed A K Abdul Karim
suhailahamedabdulkarim.a.k@gmail.com

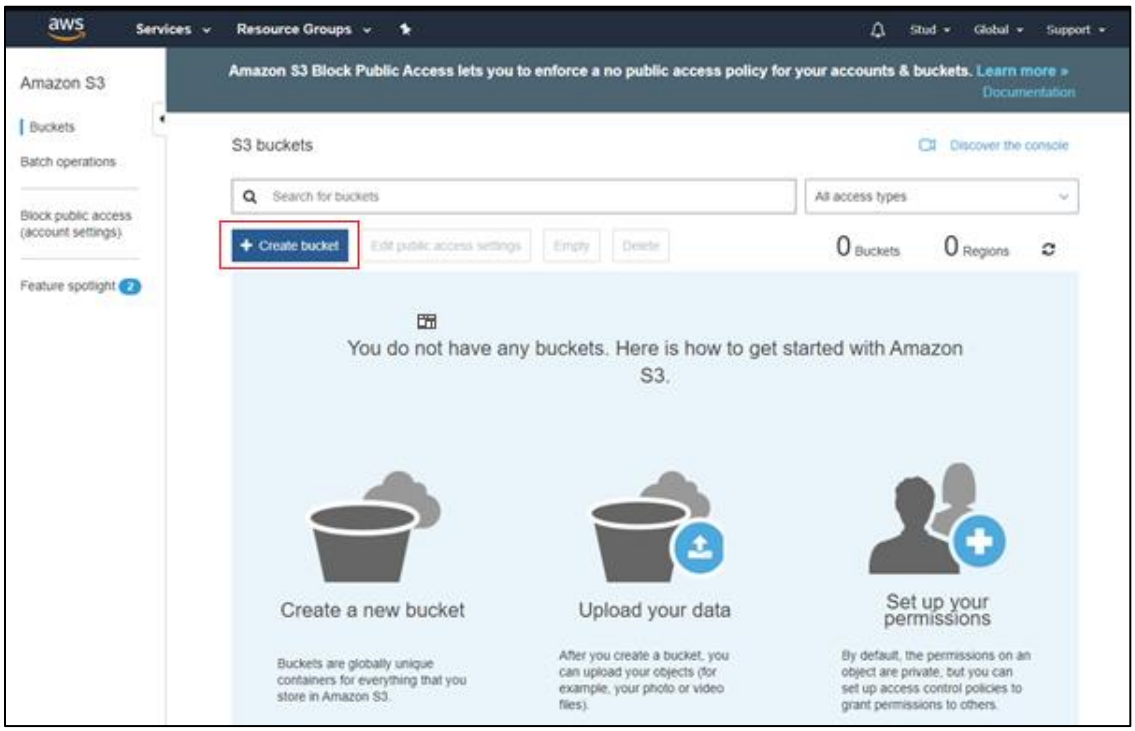
Amazon S3: is an object storage service that offers industry-leading scalability, data availability, security, and performance. This means customers of all sizes and industries can use it to store and protect any amount of data for a range of use cases, such as websites, mobile applications, backup and restore, archive, enterprise applications, IoT devices, and big data analytics. Amazon S3 provides easy-to-use management features so you can organize your data and configure finely-tuned access controls to meet your specific business, organizational, and compliance requirements. It allows to upload, store, and download any type of files up to 5 TB in size.

Steps to create an amazon S3 bucket with a public access:

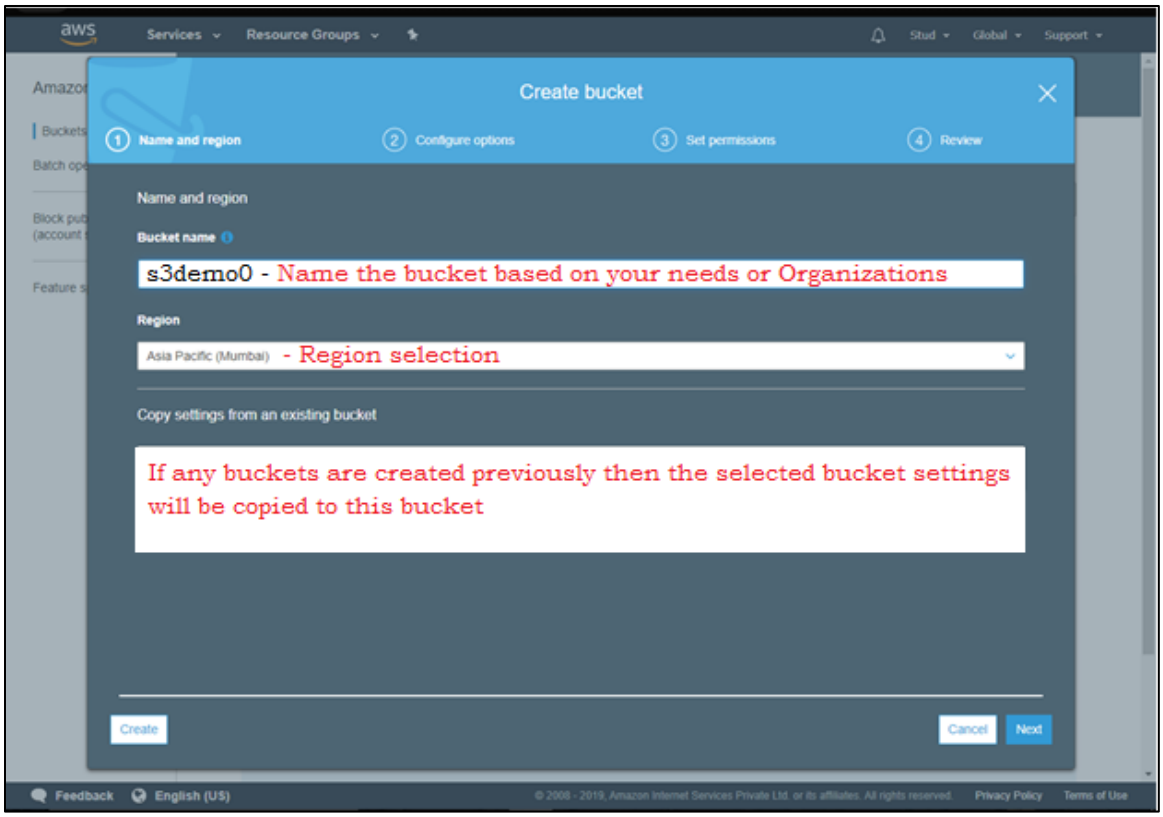
1. Login into Amazon Console and in the services search for S3 below Storage features



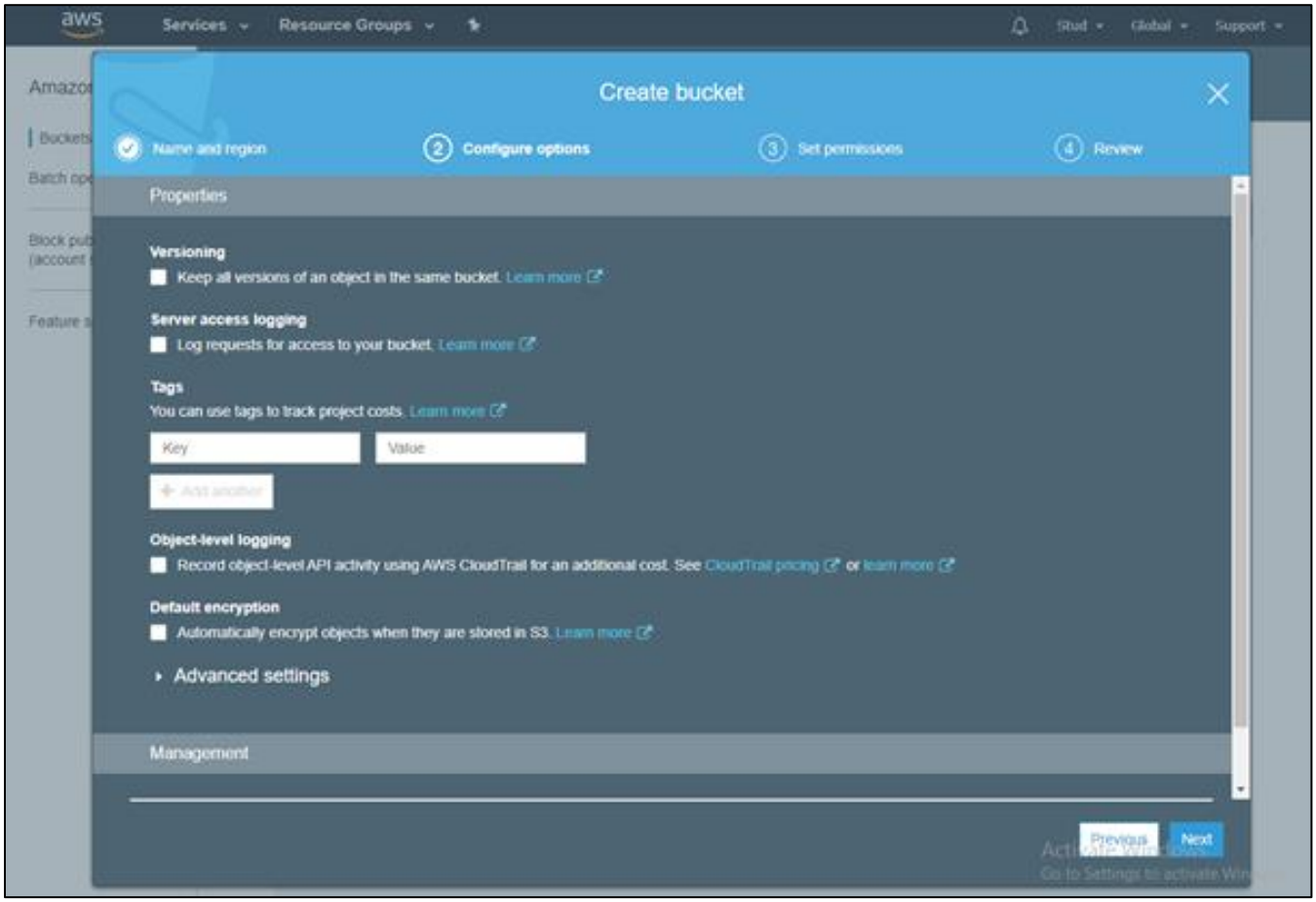
2. It will open a new console page to Amazon S3 and to Create Bucket select + sign create bucket icon



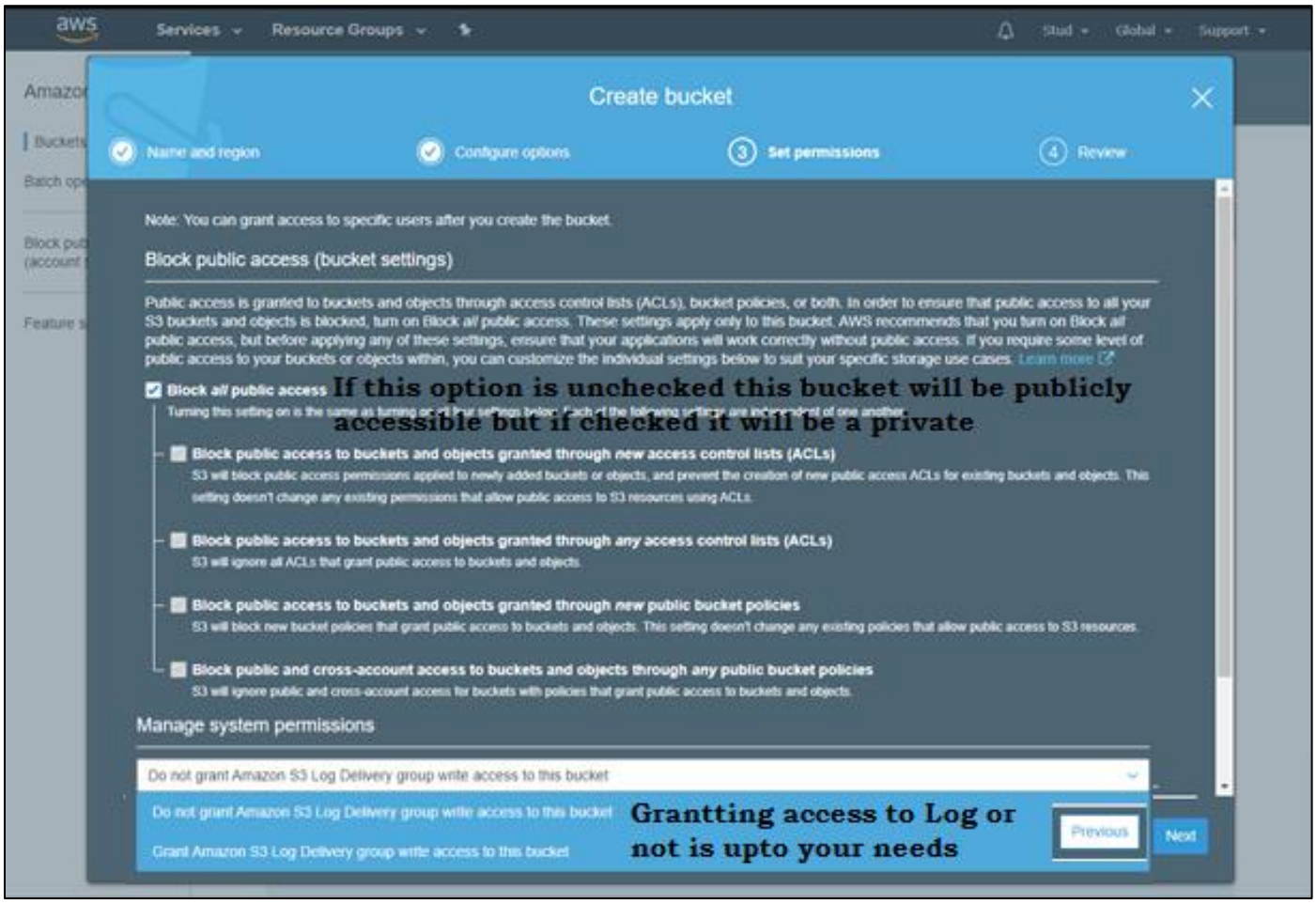
3. We need to provide the name, Region and copy the setting of the previous bucket if there are any available and select next for configure options

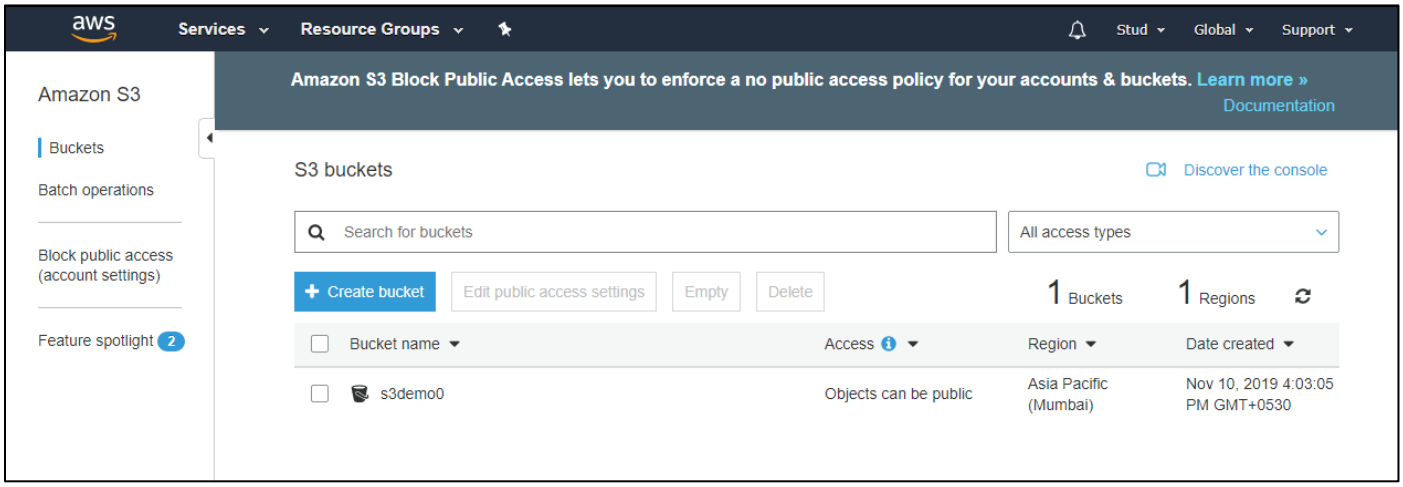


4. In this option select and make change based on your requirement and select next to set permission

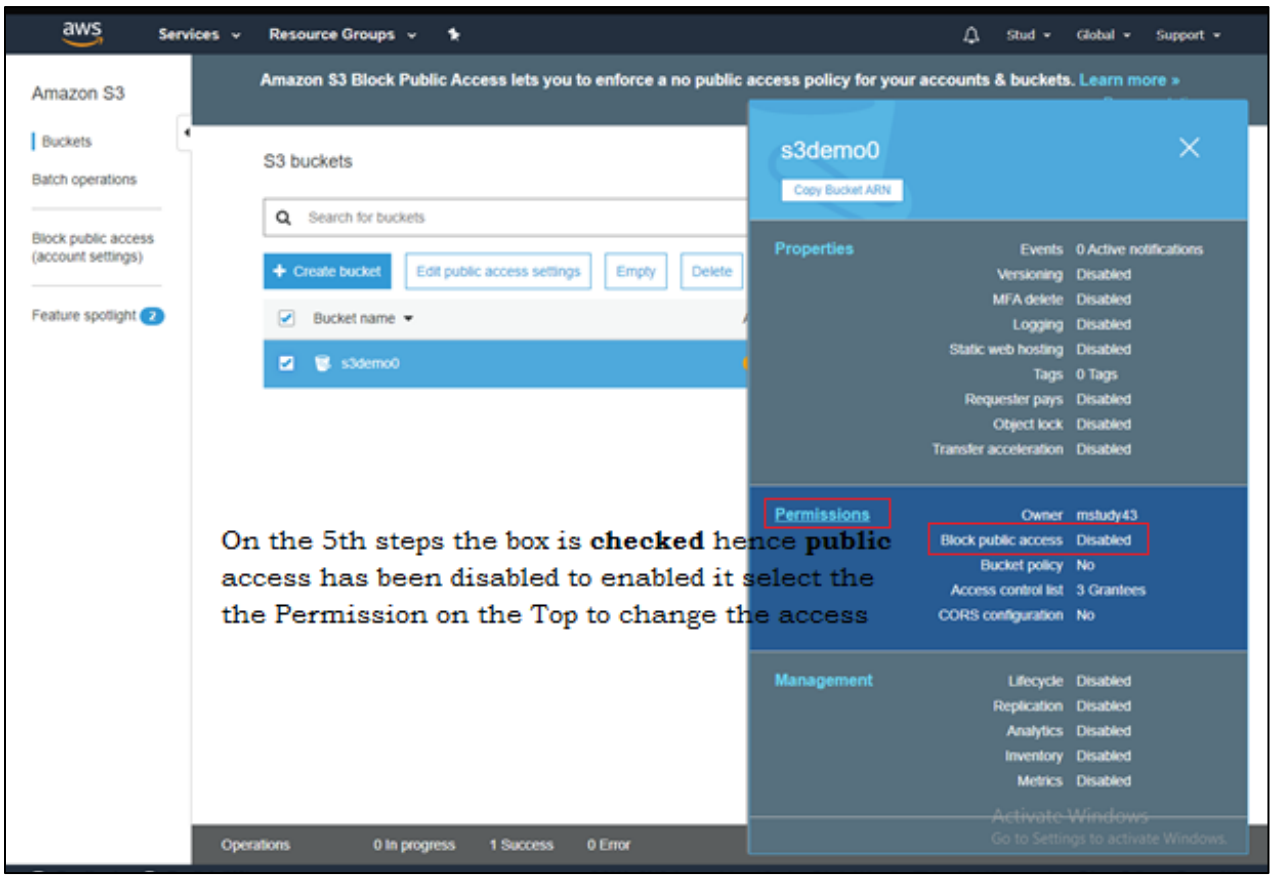


5. While setting the Permission we need to provide the access based on the need of the project or usage of bucket. The next option will be reviewing and next to it the bucket will be created

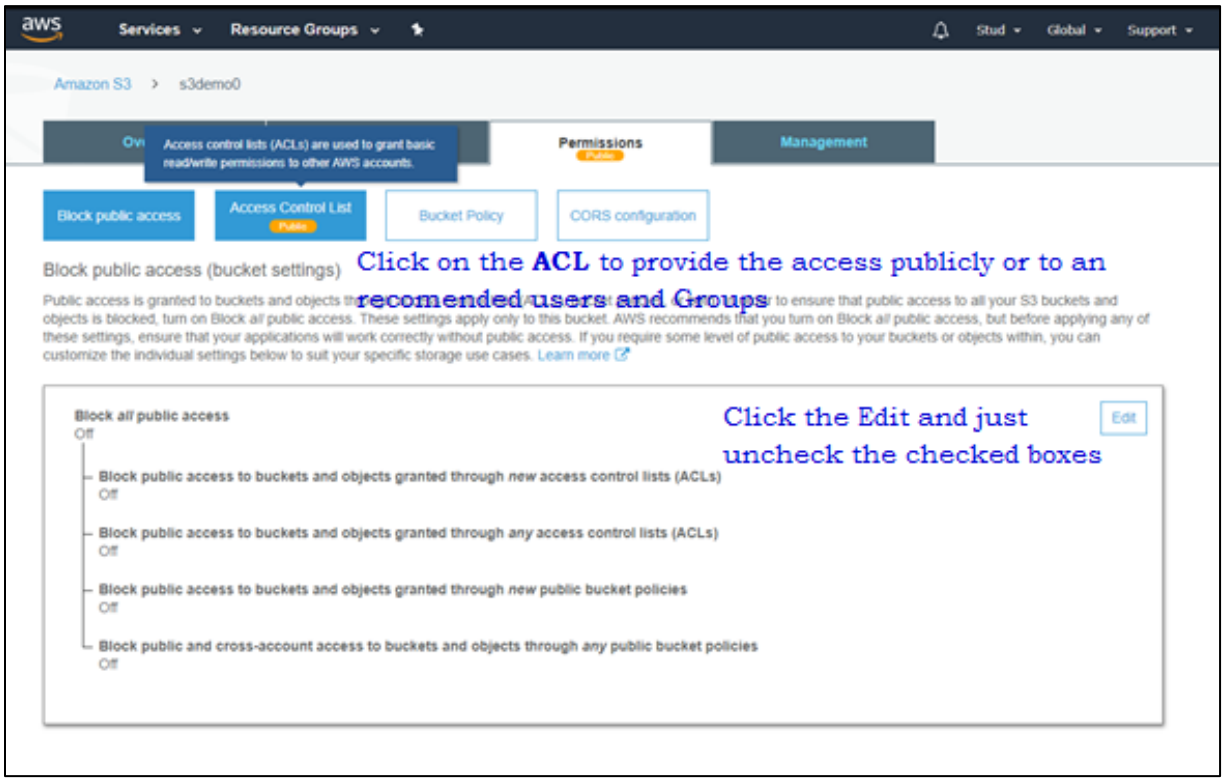




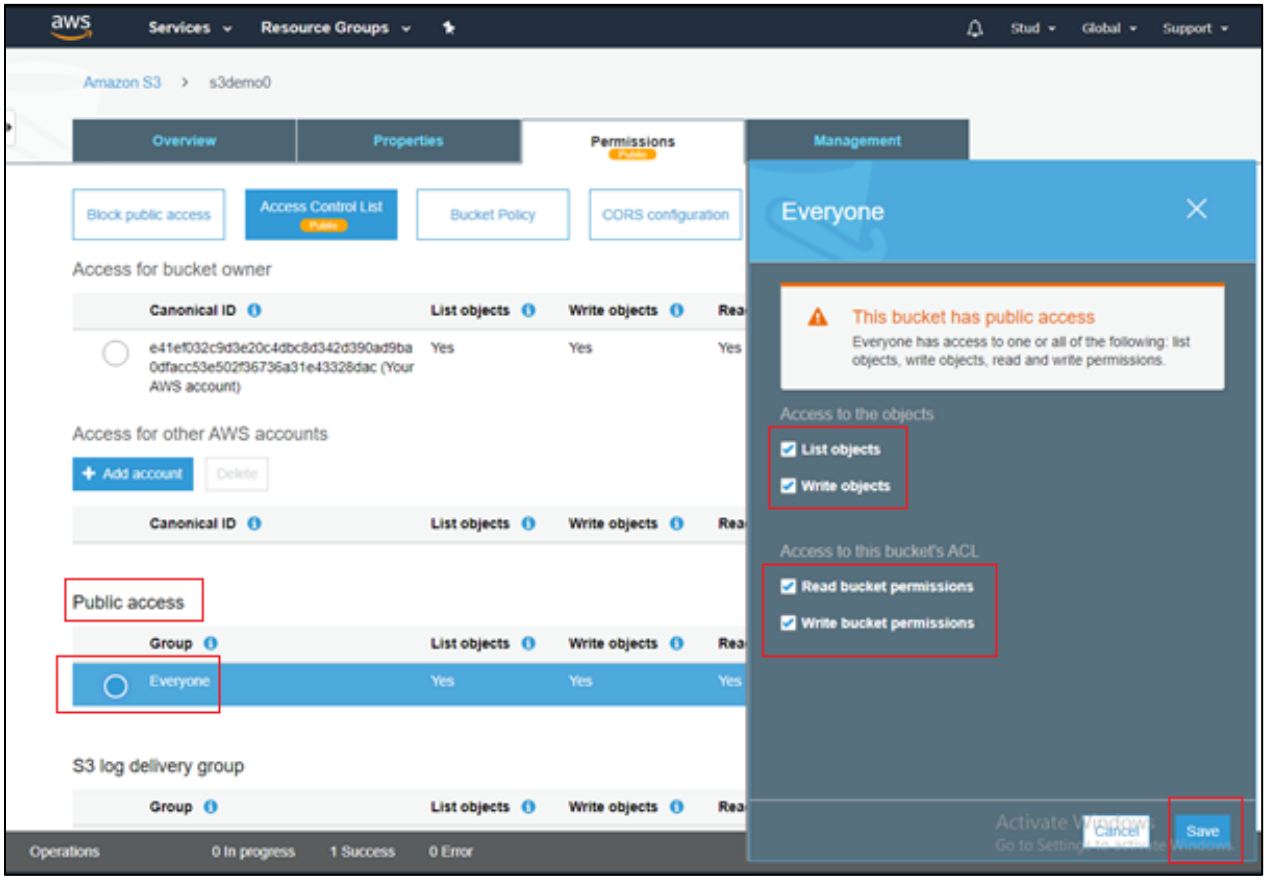
6. When you select the bucket it display three function of bucket as given the picture



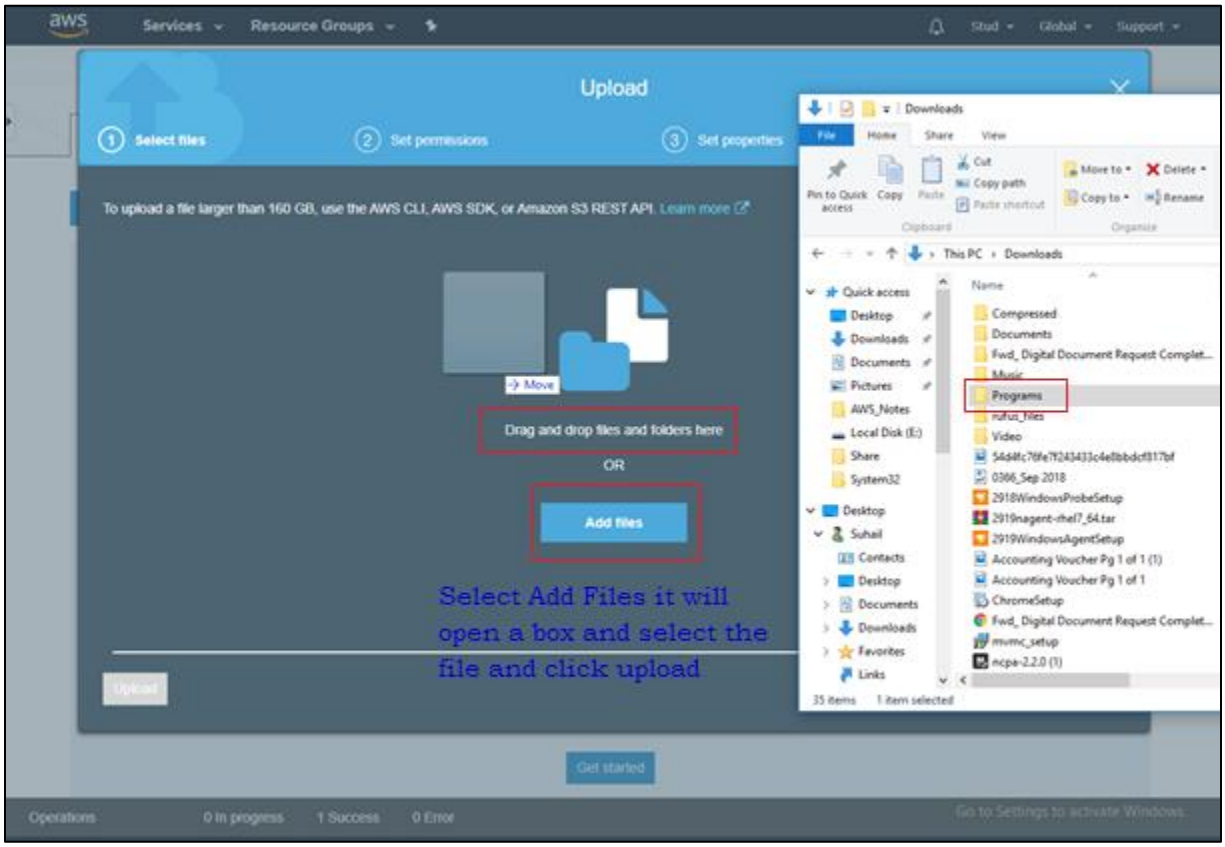
7. Select the **Permission** from the 6th step and it will navigate to this page image given below



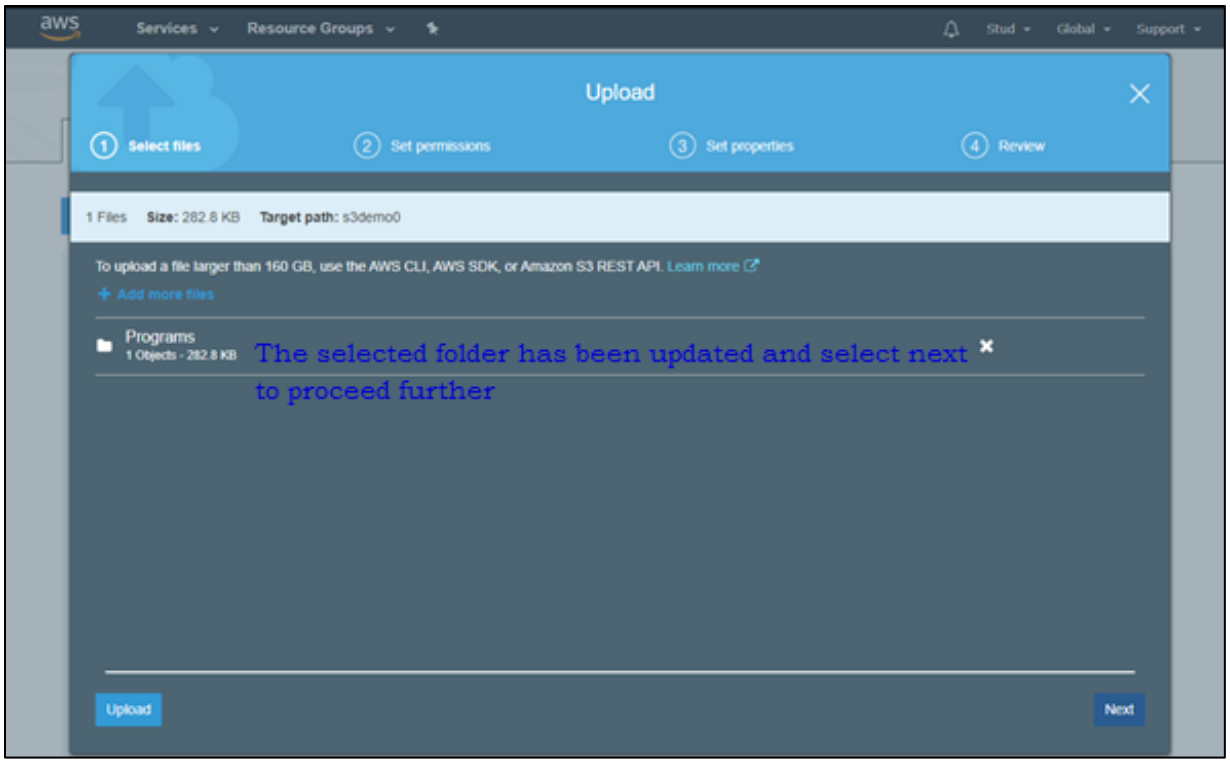
8. Select the ACL on the top it will open a new window in it below Public access, select the Everyone and check all the box to access the S3 storage bucket publicly and save it



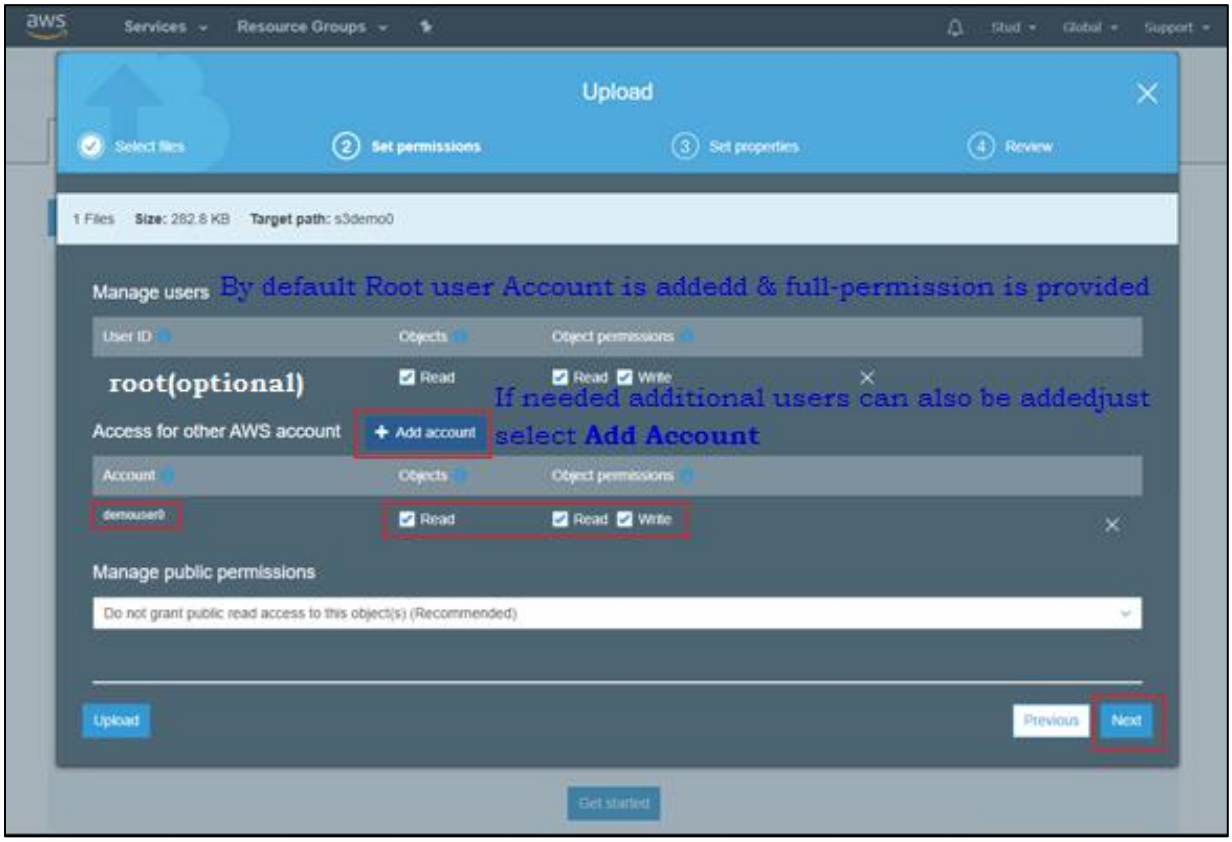
9. Once it's done start adding the file by select the option Add Files or open folder in your computer and select the file Drag & Drop it



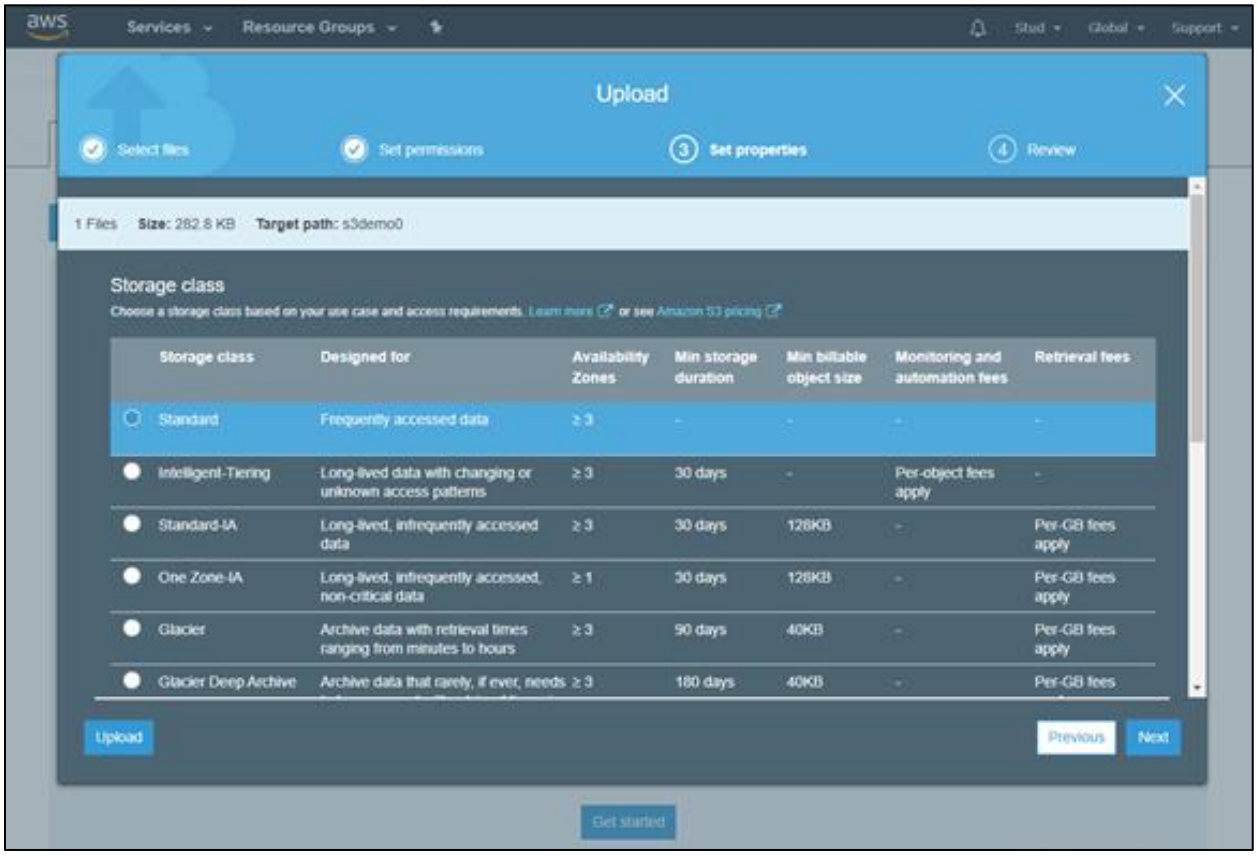
10. The Folder has been update and select next to set the permission of the selected folder



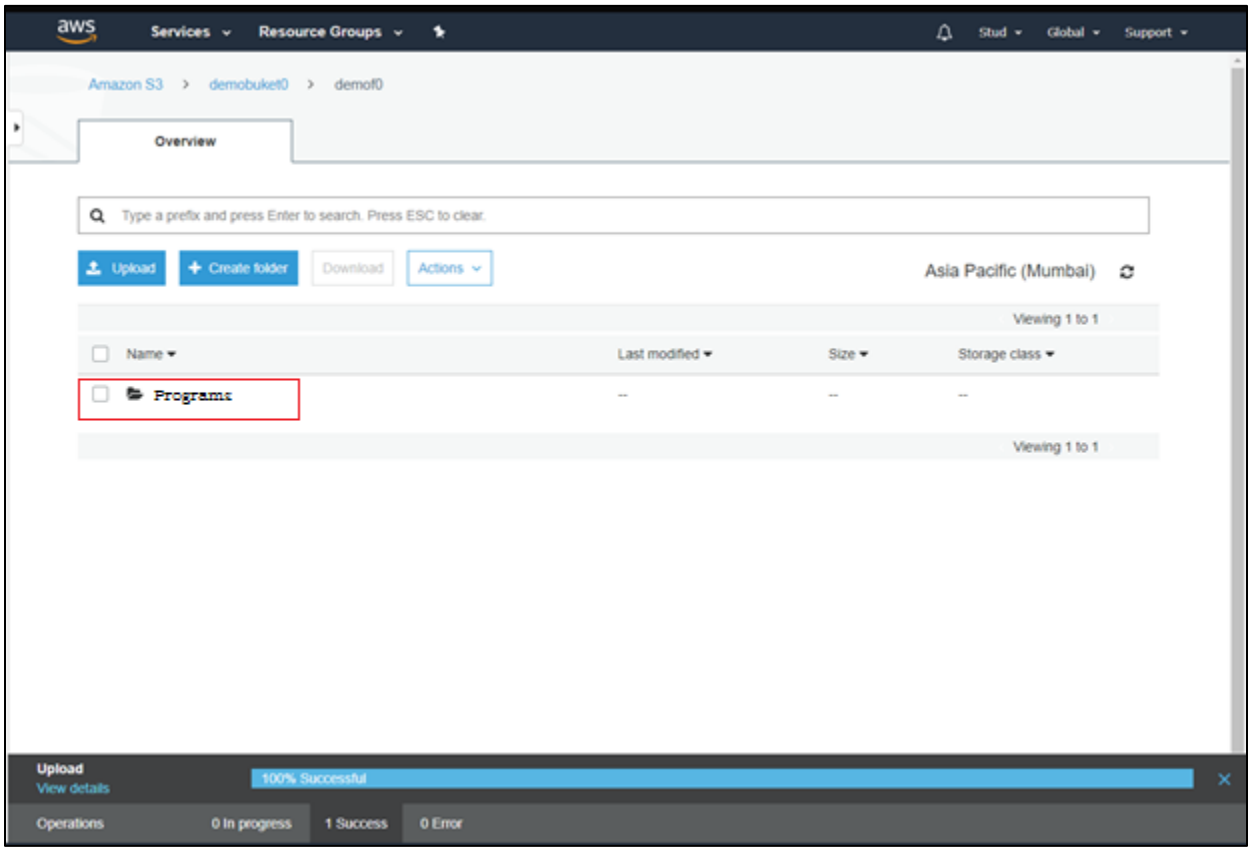
11. Users added and Permission are given in this page



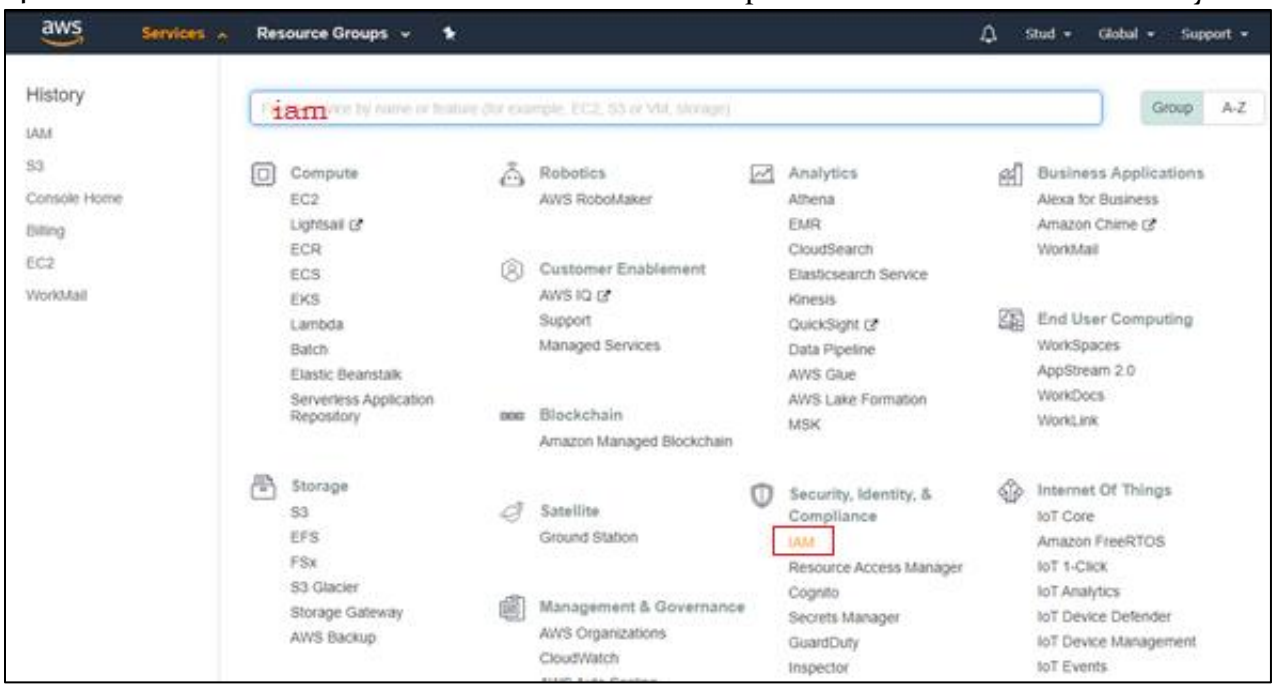
12. Based on project needs properties are selected. I am selecting Standard and next to review and upload the Folder/Files



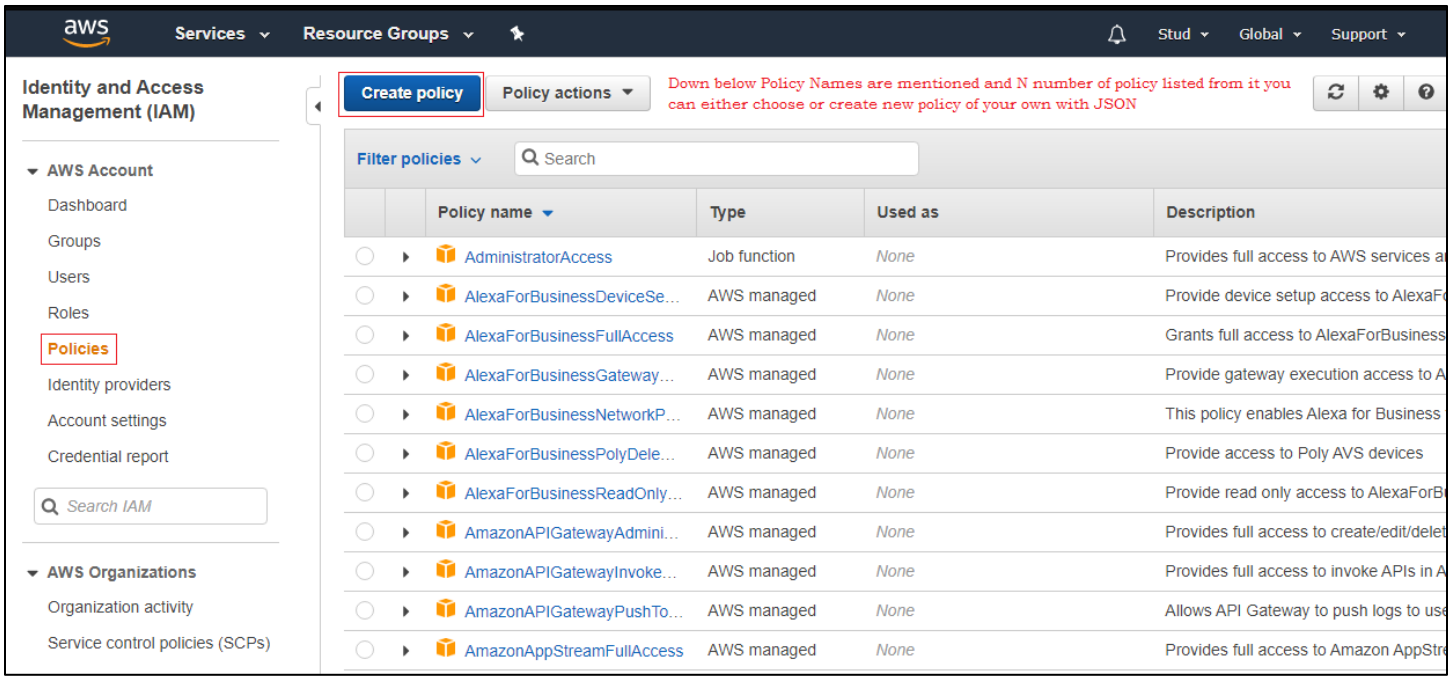
13. On the below the it will display the file upload was Success



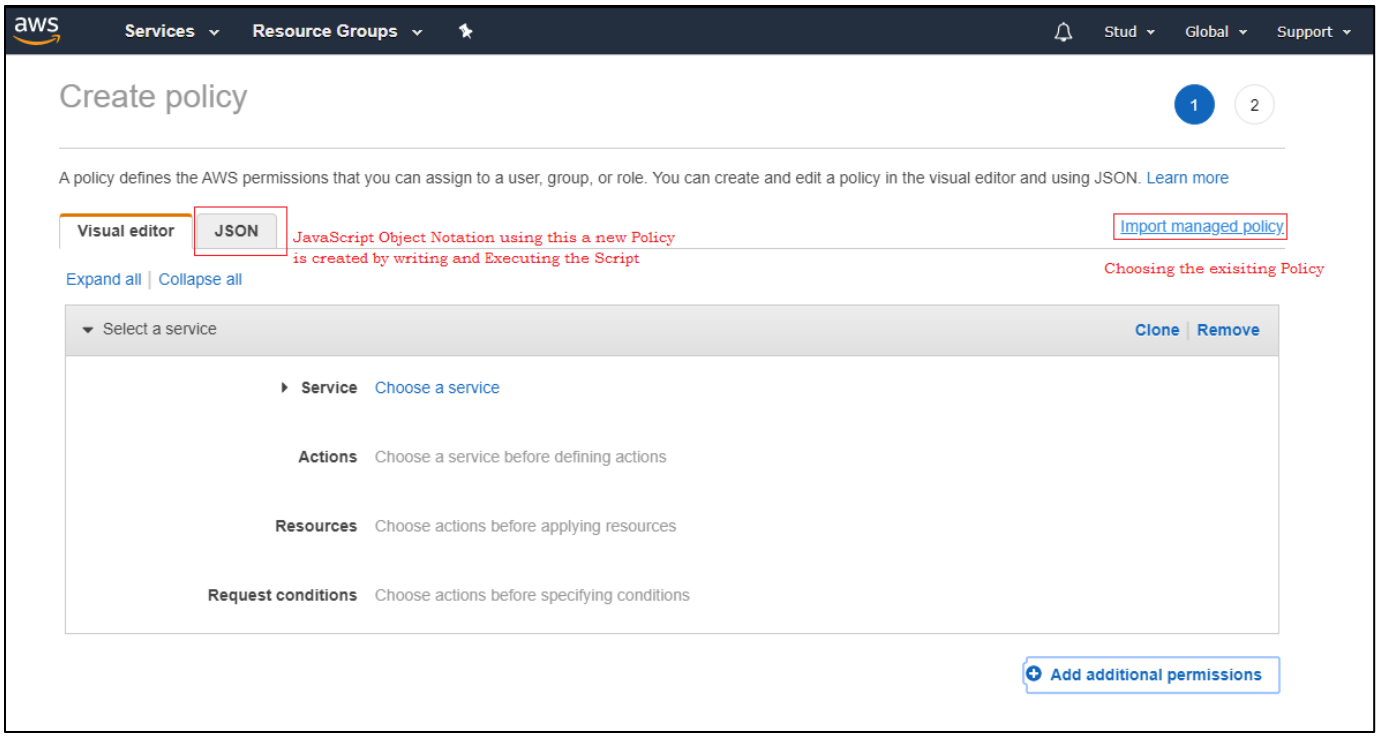
14. Go to Service search and select IAM roles to write policies for the bucket based on your needs



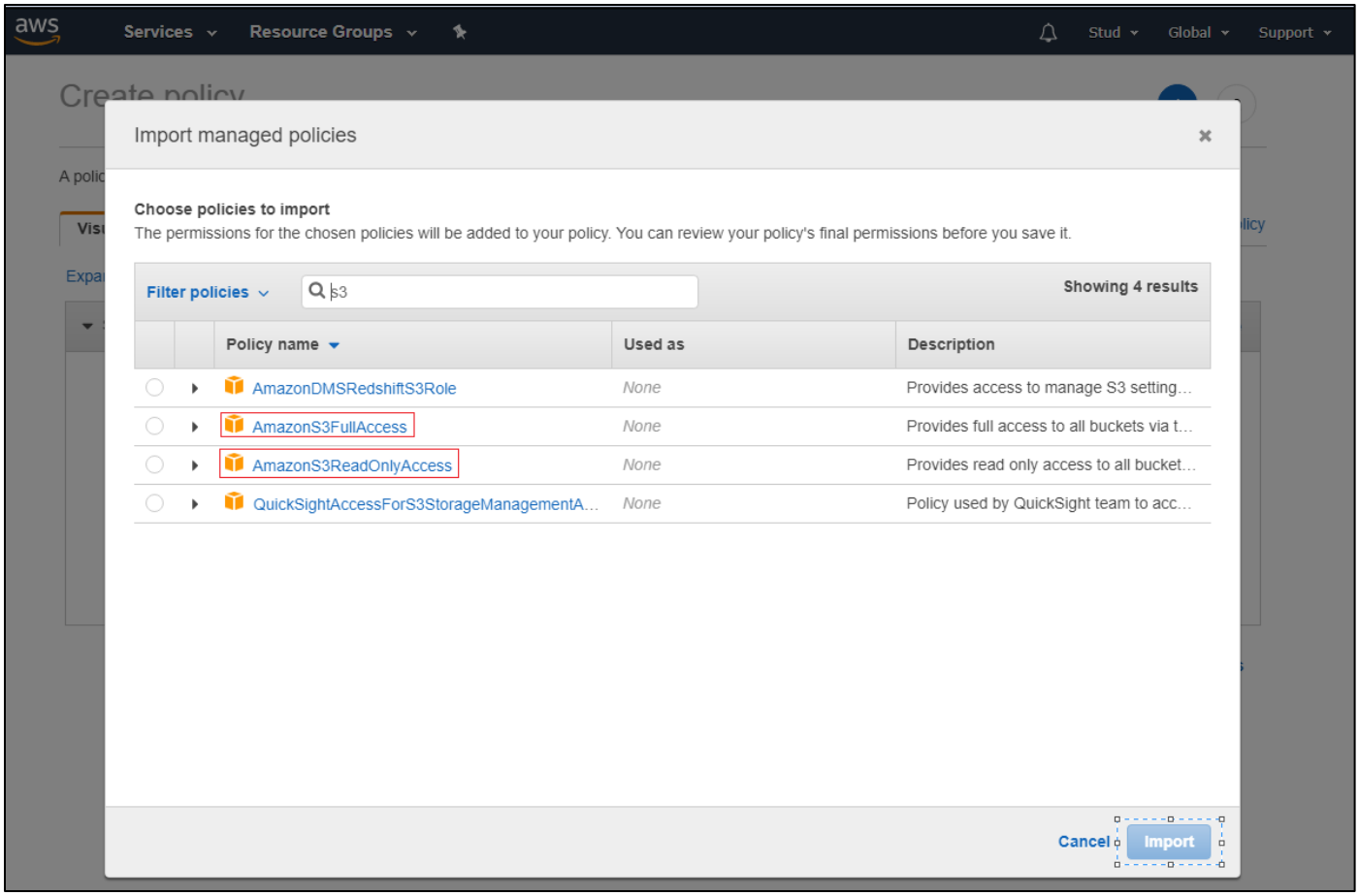
15. In this window you can create a Policy



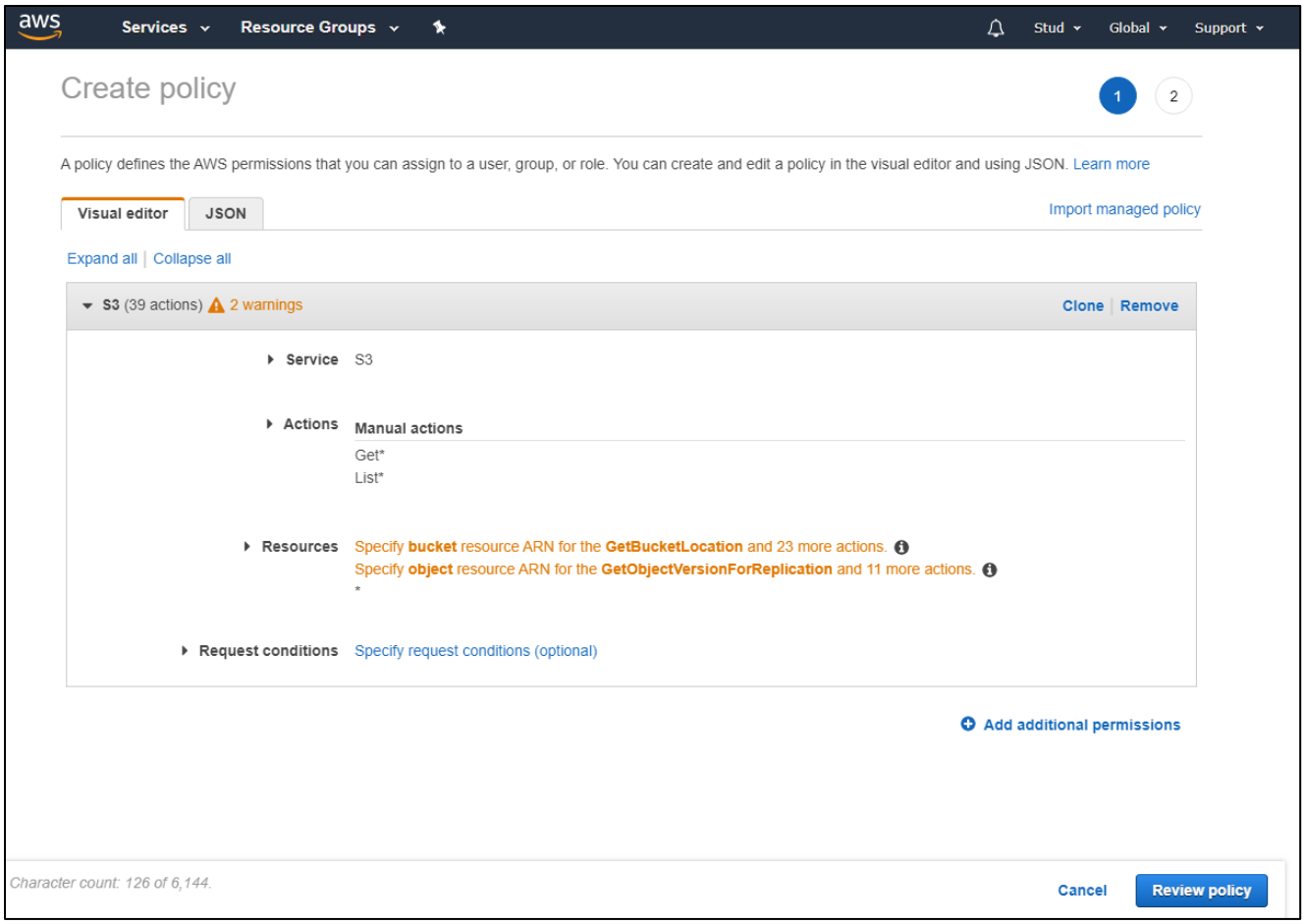
16. Policy can be created using JSON or import the existing policy



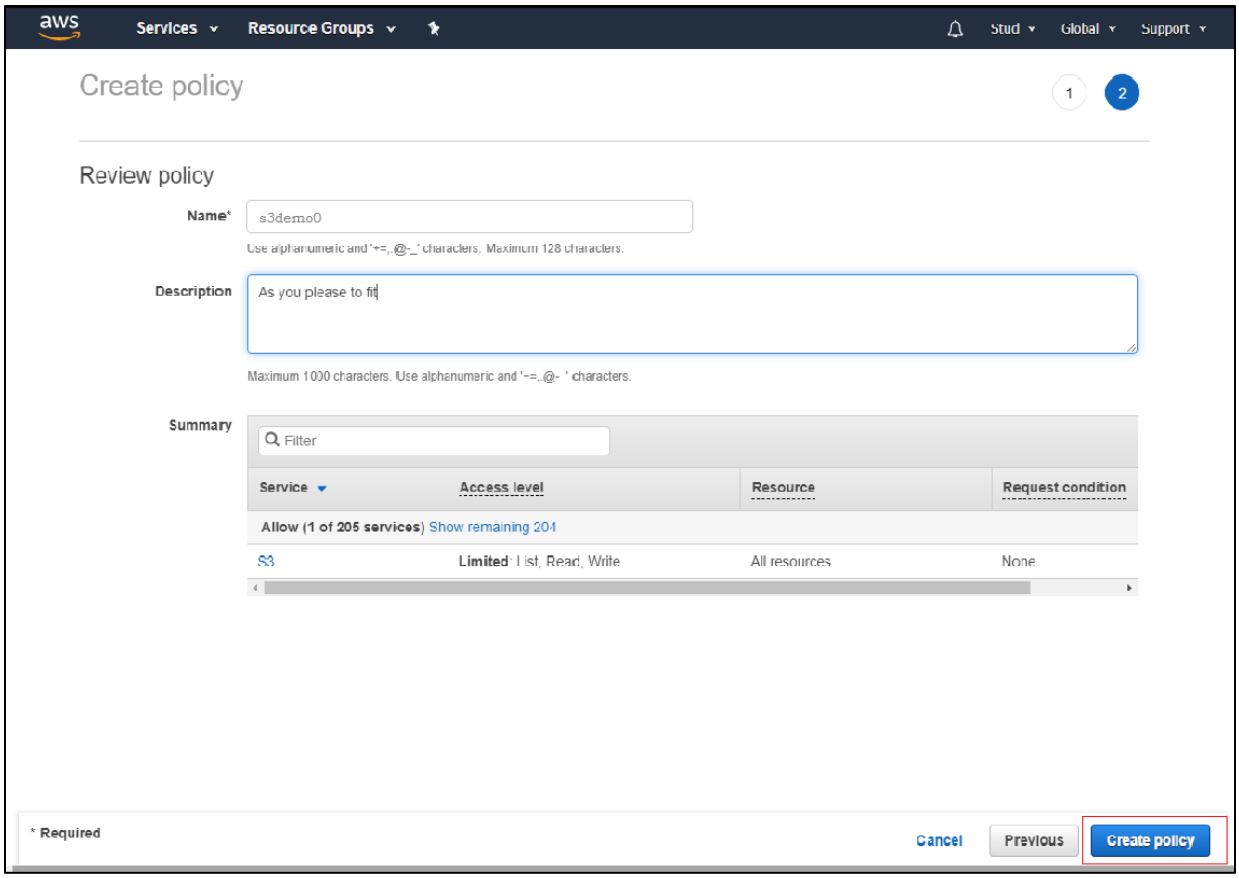
17. Import the existing Policy once it selected import the Policy



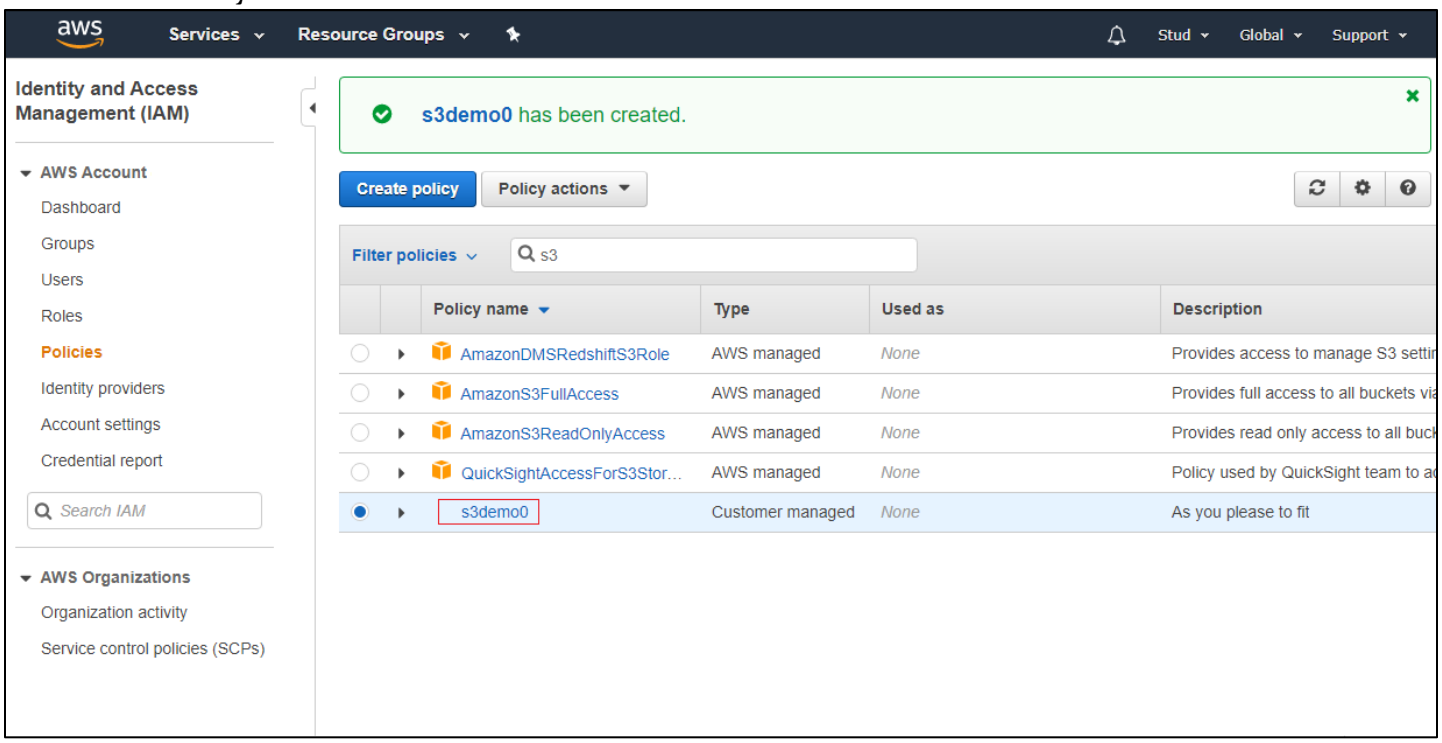
18. After importing the Policy select Review



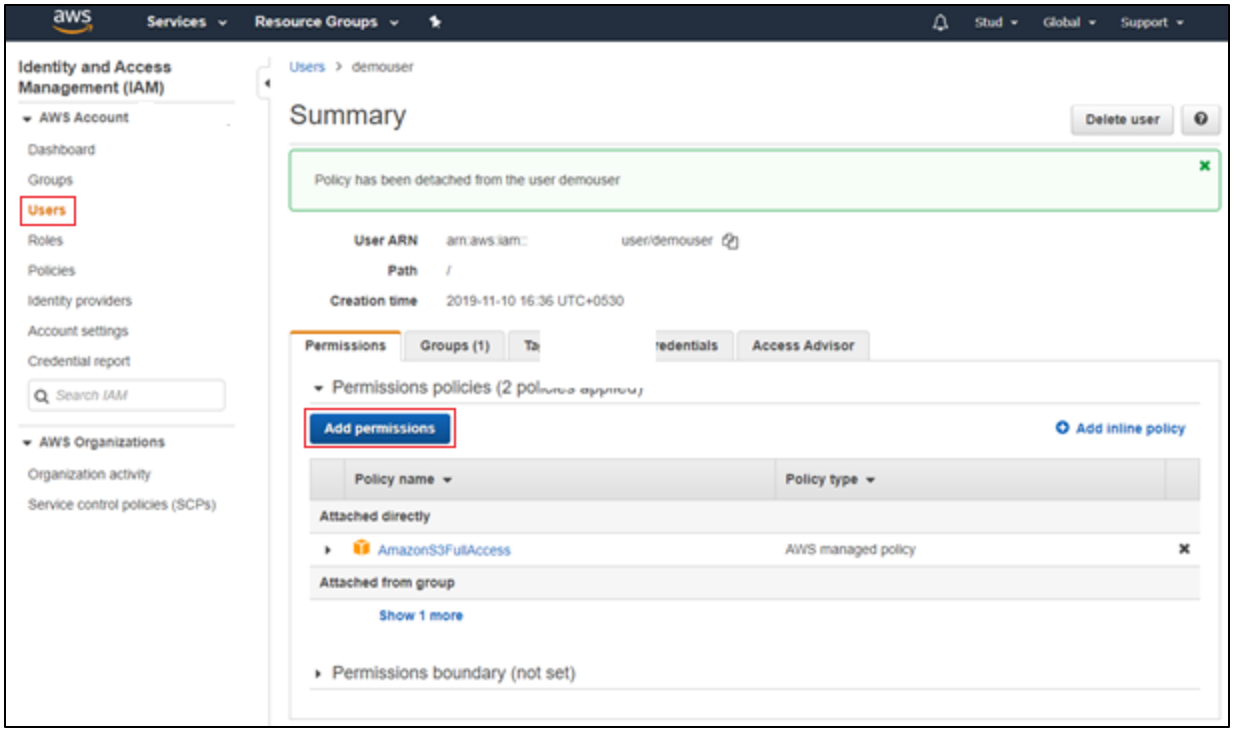
19. Select Create Policy to create the policy



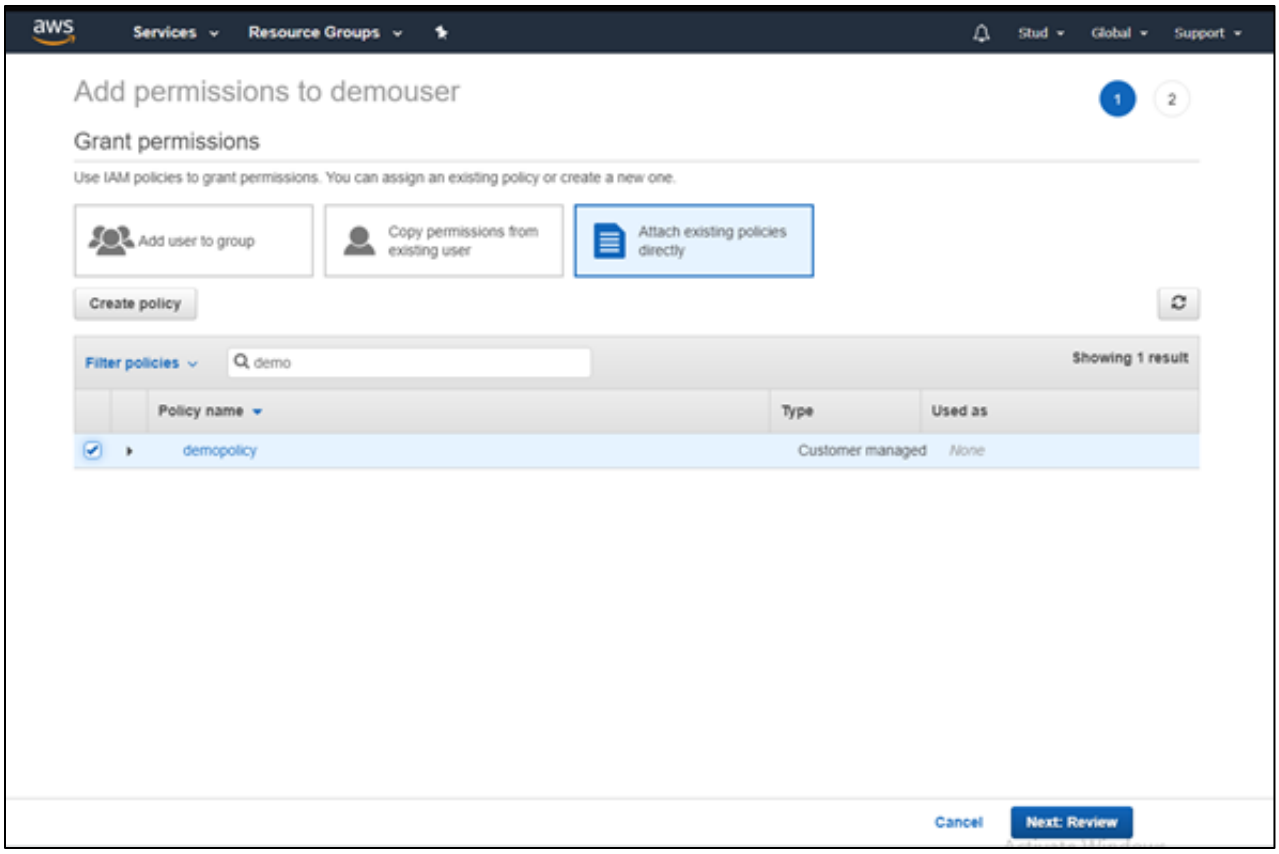
20. Custom Policy has been created



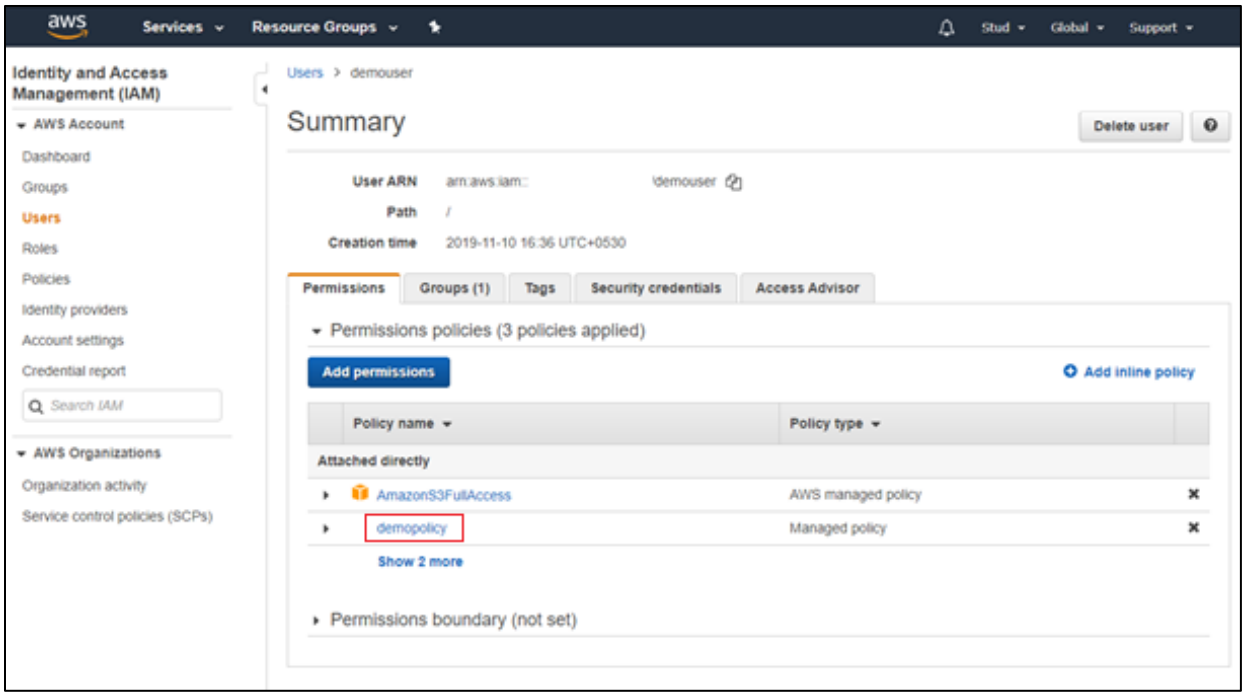
21. Policy is attached to Users or Groups by selecting the particular Users and in it Add Permissions



22. Search and select existing Policy to attach under the existing policy directly and in the next page select Add permission to attach the Policy to the user

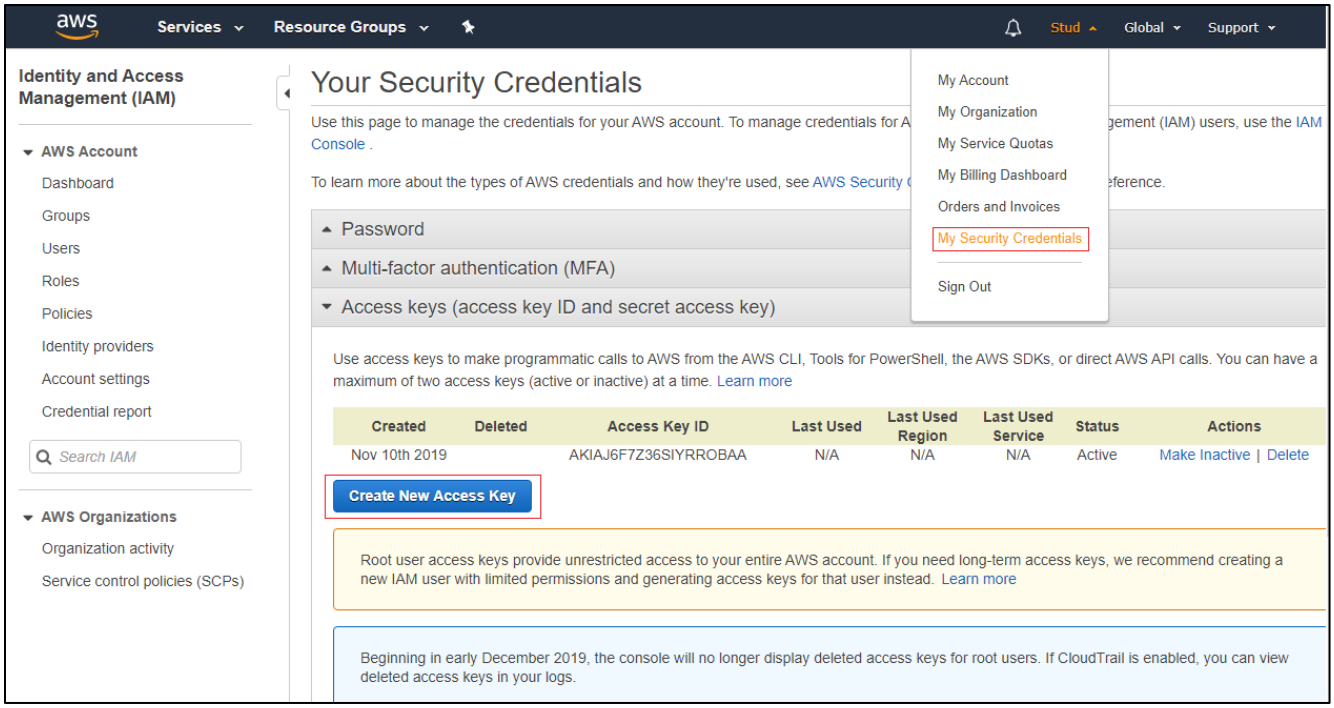


23. Once the Policy has been attached it will be displayed below in the Add permissions

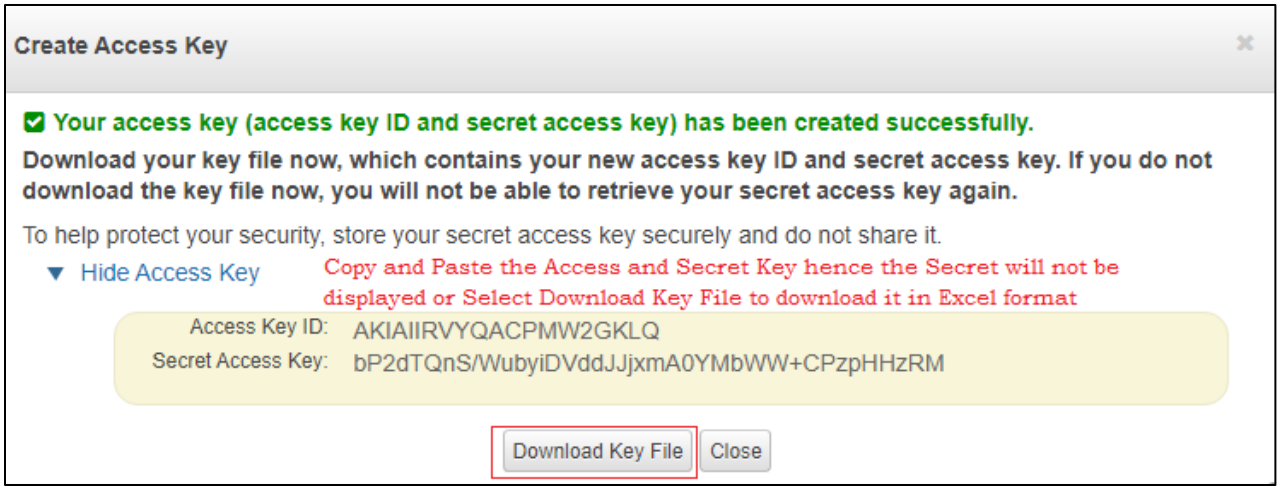


Steps to Create a Key:

1. In the top of the AWS Console select your name and drop a list in those select My Security Credentials



2. Select Create New Access Key to create a Key



Steps to Mount the S3 bucket in Linux:

1. Login your Linux Console
2. Update the OS - > yum –y update

Install the necessary packages - > yum install automake fuse fuse-devel gcc-c++ git libcurl-devel libxml2-devel make openssl-devel

3. Use this command to clone the code from git - > git clone https://github.com/s3fs-fuse/s3fs-fuse.git

```
[root@studserver ~]# git clone https://github.com/s3fs-fuse/s3fs-fuse.git
Cloning into 's3fs-fuse'...
remote: Enumerating objects: 26, done.
remote: Counting objects: 100% (26/26), done.
remote: Compressing objects: 100% (25/25), done.
remote: Total 5738 (delta 10), reused 4 (delta 1), pack-reused 5712
Receiving objects: 100% (5738/5738), 3.42 MiB | 755.00 KiB/s, done.
Resolving deltas: 100% (3968/3968), done.
```

4. Change directory to compline and install the code - > cd s3fs-fuse

```
[root@studserver ~]# cd s3fs-fuse
[root@studserver s3fs-fuse]# ls
AUTHORS     ChangeLog       configure.ac  doc      Makefile.am  src
autogen.sh  COMPILATION.md  COPYING       INSTALL  README.md    test
```

5. Complie the code - > ./autogen.sh
6. Configure the code - > ./configure --prefix=/usr --with-openssl
7. Install the code -> make
8. Install all - > make install
9. Open an editor copy and paste the Access and Secret Keys in the location - > nano /etc/passwd-s3fs

```
[root@studserver s3bucket]# nano /etc/passwd-s3fs
```

```
  GNU nano 2.3.1            File: /etc/passwd-s3fs

Your_accesskey:Your_secretkey
```

10. Change the permission of the folder - > chmod 640 /etc/passwd-s3fs

```
[root@studserver s3bucket]# chmod 640 /etc/passwd-s3fs
```

11. Create a folder to mount the s3 bucket - > mkdir /s3bucket/

```
[root@studserver s3bucket]# mkdir /s3bucket/
```

12. Enter this command - > s3fs your_bucketname -o use_cache=/tmp -o allow_other -o uid=1001 -o mp_umask=002 -o multireq_max=5 /mys3bucket

13. Open editor and enter the following command - > nano /etc/rc.local/ "/usr/local/bin/s3fs your_bucketname -o use_cache=/tmp -o allow_other -o uid=1001 -o mp_umask=002 -o multireq_max=5 /mys3bucket"

```
  GNU nano 2.3.1               File: /etc/rc.local

#!/bin/bash
# THIS FILE IS ADDED FOR COMPATIBILITY PURPOSES
#
# It is highly advisable to create own systemd services or udev rules
# to run scripts during boot instead of using this file.
#
# In contrast to previous versions due to parallel execution during boot
# this script will NOT be run after all other services.
#
# Please note that you must run 'chmod +x /etc/rc.d/rc.local' to ensure
# that this script will be executed during boot.

touch /var/lock/subsys/local


/usr/local/bin/s3fs s3demo0 -o use_cache=/tmp -o allow_other -o uid=1001 -o mp_umask=0$
```

14. Use the command df –Th for verification - > df -Th

```
[root@studserver s3bucket]# df -Th
Filesystem              Type       Size  Used Avail Use% Mounted on
devtmpfs                devtmpfs   744M     0  744M   0% /dev
tmpfs                   tmpfs      756M     0  756M   0% /dev/shm
tmpfs                   tmpfs      756M  8.9M  747M   2% /run
tmpfs                   tmpfs      756M     0  756M   0% /sys/fs/cgroup
/dev/mapper/centos-root ext4        50G  1.8G   45G   4% /
/dev/sda1               ext4       976M  130M  780M  15% /boot
/dev/mapper/centos-home ext4        18G   45M   17G   1% /home
tmpfs                   tmpfs      152M     0  152M   0% /run/user/0
s3fs                    fuse.s3fs  256T     0  256T   0% /s3bucket
```

Amazon Reference Links:

1. https://docs.aws.amazon.com/AmazonS3/latest/user-guide/create-configure-bucket.html
2. https://aws.amazon.com/blogs/aws/amazon-s3-block-public-access-another-layer-of-protection-for-your-accounts-and-buckets/?sc_ichannel=ha&sc_icontent=console_aws-console-s3_s3_storage1_awssm-1111&sc_icampaign=Adoption_Campaign_CSI_06_2019_Storage_S3_BlockPublicAccess_Console&trkCampaign=CSI_Q2_2019_Storage_S3_BlockPublicAccess_Blog&trk=ha_a131L000005vHtIQAU&sc_ioutcome=CSI_Digital_Marketing&sc_iplace=console_aws-console-s3_s3_INFOBAR
3. https://docs.aws.amazon.com/AmazonS3/latest/gsg/CreatingABucket.html

Other Sites Reference Links:

1. https://cloudkul.com/blog/mounting-s3-bucket-linux-ec2-instance/
2. https://www.javatpoint.com/aws-creating-s3-bucket
3. https://tecadmin.net/mount-s3-bucket-centosrhel-ubuntu-using-s3fs/
4. https://www.youtube.com/watch?v=9S9ePWctKkU
5. https://www.youtube.com/watch?v=vtz3ruCebH8
   https://www.youtube.com/watch?v=pvoKmH2GsQQ