AWS IAM very important administration tool, but every developeraware of it.



Every developer must aware these 4 services

User groups: it's used to assign privileges in the form of policies.

Users: It's fundamental component used to do anything (key pairs very important)

IAM roles: Very important, if u want to access aws service to another aws service use IAM roles.

Policies: Fundamental privileges in the form of policies.

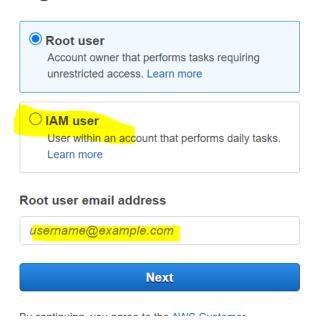


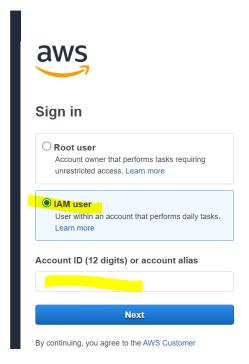
Now right side hilighted account alias and below something URL available, it's very important.

I think u noticed when u r login, it's showing IAM user



Sign in





You noticed if u choose IAM user it asked 12 digits number (you have to enter here). If you don't want this number you can rename this using **Create** button

AWS Account

 \mathbb{C}

Account ID

A 609752856962

Account Alias

609752856962

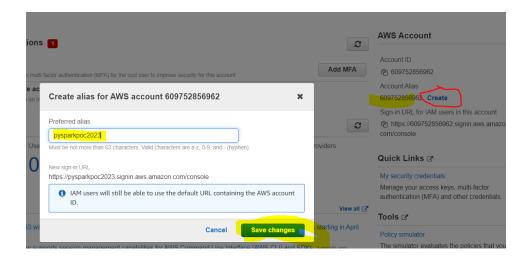
Create

Sign-in URL for IAM users in this account

com/console

Quick Links ♂

My security credentials



Account ID 609752856962 Account Alias pysparkpoc2023 Edit | Delete Sign-in URL for IAM users in this account

https://pysparkpoc2023.signin.aws.amazo

Quick Links 🗗

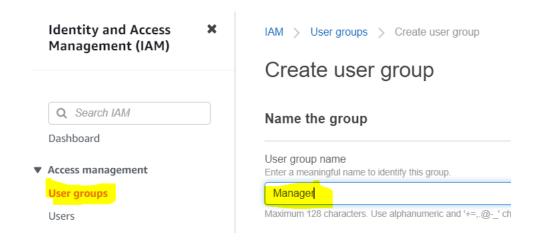
n.com/console

In ur office 90% ur loging like this only.

IAM User Groups



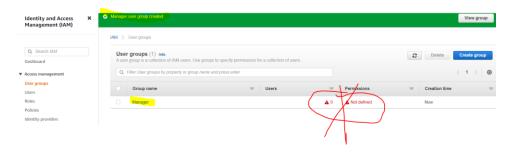
Create Group ... specify any name like "manager"



Scroll down click "create group"



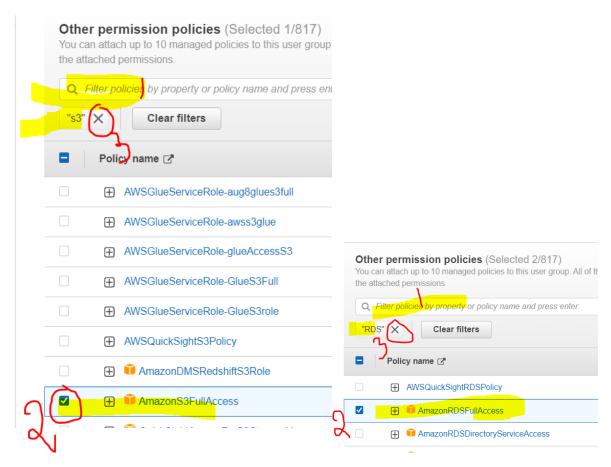
Don't' worry this red color highlighted things, "manager" group created. Click Manager group



Now Click on Permission tab Click on Add permission Click Attach Policy

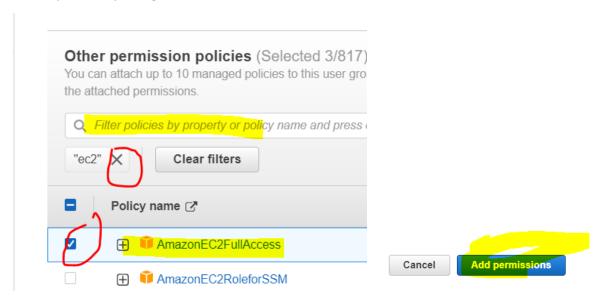


Now Click on **AmazonS3FullAccess**. It means who (users) is in manager group they will get S3 full privileges. Similarly Ec2 also.



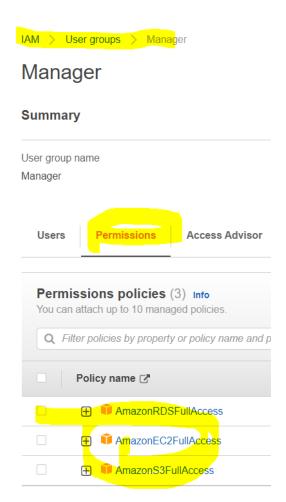
Similarly assign RDS also pls assign.

Similarly EC2 full privileges

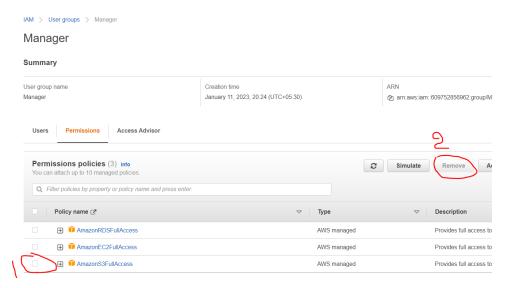


Finally Click on Add permission

Now who is in this manager group they II get S3 full, Ec2 full, RDS full privileges.

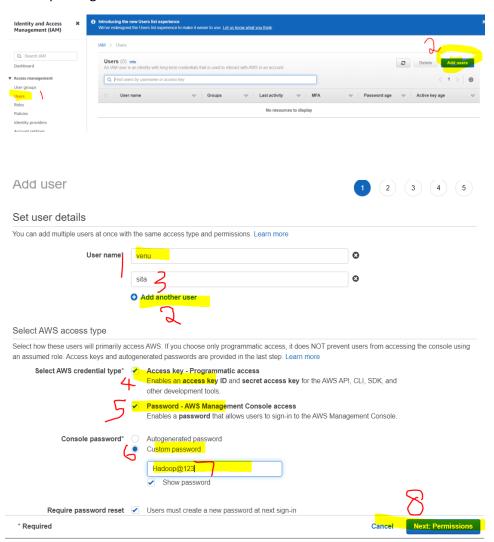


Ofcourse you can revoke privleges as well like hilighted one. (Check appropriate privileges, Click Remove)

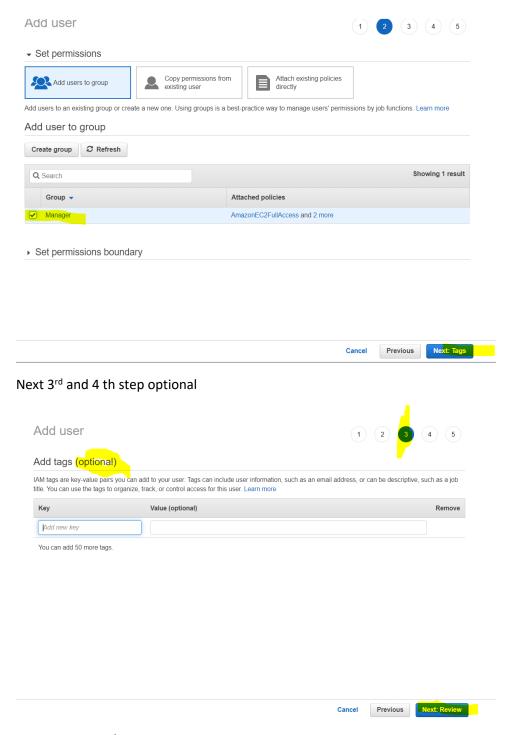


IAM Users

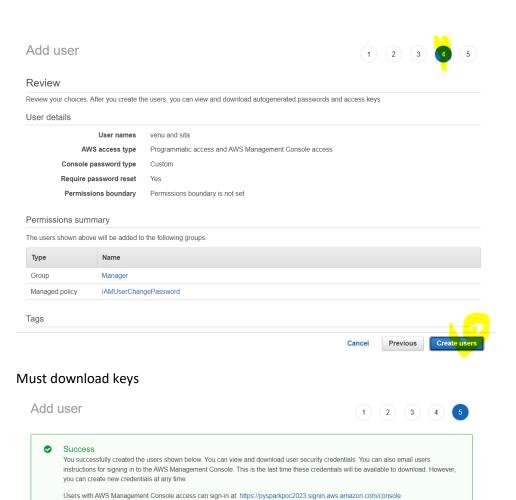
Now explaining Users:



Next



This step also (4th step) optional



These keys very important Don't share these keys to anyone

Access key ID

Secret access key

Email login instructions

Send email

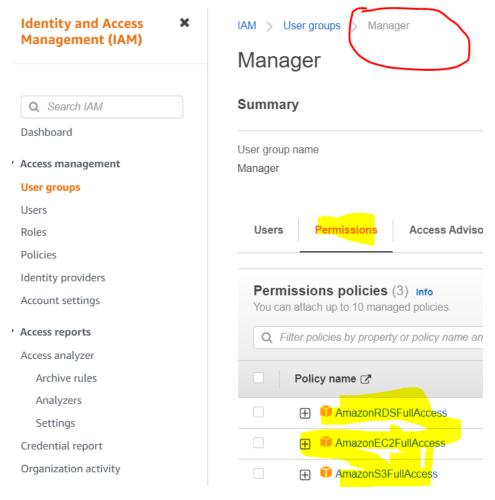
Send email

Now above 2 users are members in Manager group.

Use

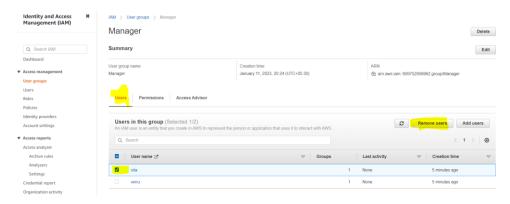


Means they have full privileges to access S3, ec2, and RDS



In future you can add and remove new/existing users like this. Just click on person name's check box and click Remove users.

Similarly to add .. click add users and add new users same way



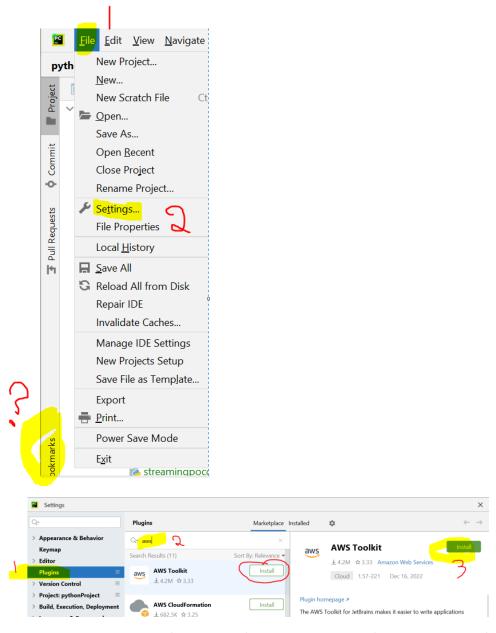
How to Access these IAM user credentials

Let eg:

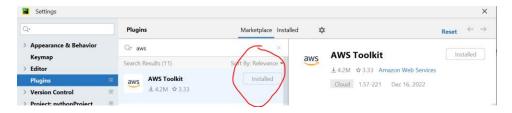
U want to access S3 from PyCharm or Intellij (3rd party tool) .. use these iam keys.

Now check Pycharm left side There is no aws access tab ...

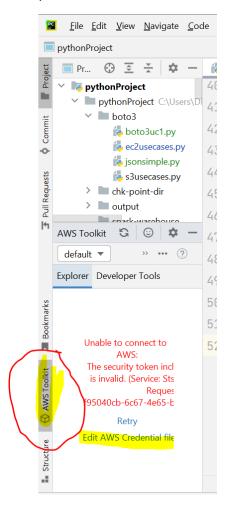
Go to File > Settings

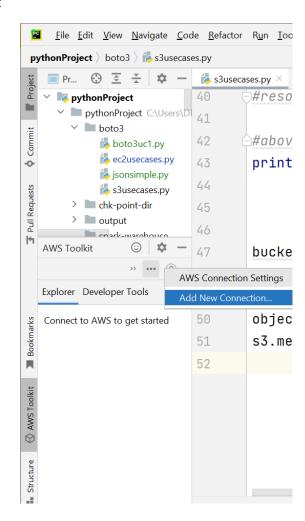


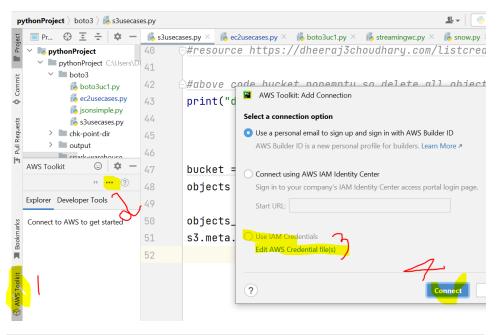
Now AWS plugin installed, (sometime it's showing restart IDE) restart pycharm for better results.

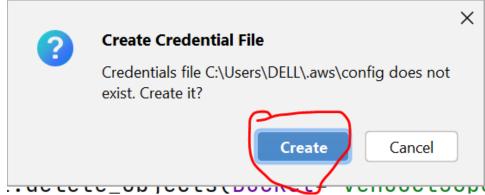


Now pls check left side U have AWS Toolkit

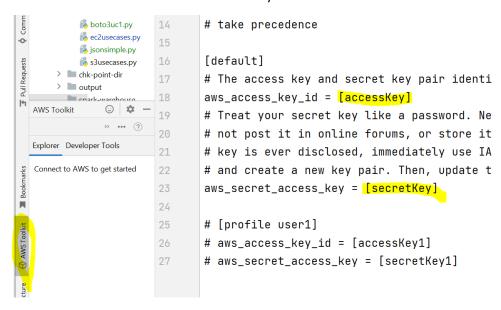








Click on edit AWS credentials enter IAM keys

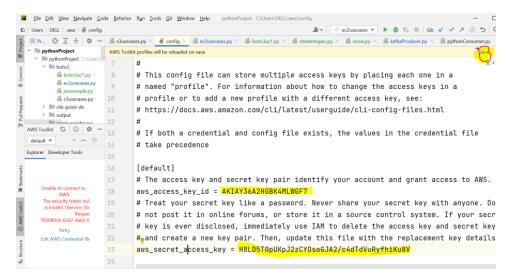


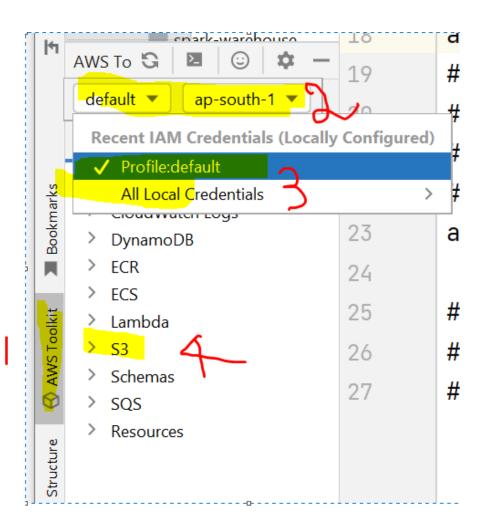
Earlier you downloaded IAM keys

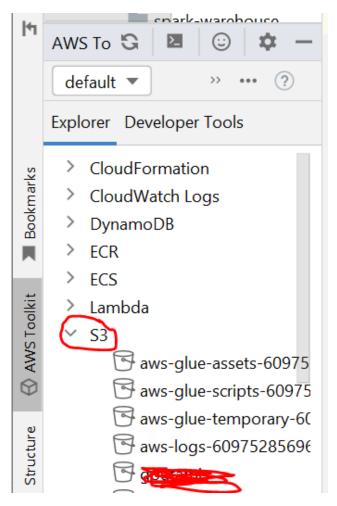
User name, Password, Access key ID, Secret access key, Console login link

venu,,AKIAY36A2HGBK4MLWGF7,H8LD5T0pUKpJ2zCYOsoGJA2/c4dTdVuRyfhiK
u8V,https://pysparkpoc2023.signin.aws.amazon.com/console
sita,,AKIAY36A2HGBA2VLM4XB,bvUSOHIiC1Ij0kaHEWi1w8pieJUDIVHF2M
+jPtTr,https://pysparkpoc2023.signin.aws.amazon.com/console

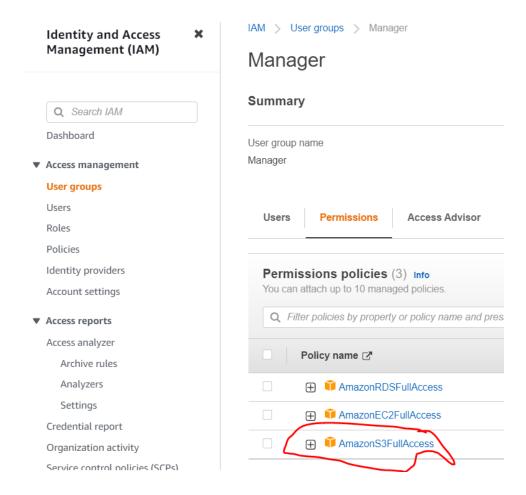
Just copy anyone user details here.







You have S3 full privileges so you have full privileges to do anything in s3.. Pls find IAM privileges from iam group



So 3rd party tool like Pycharm, Intellij, Snowflake, Databricks want to access AWS resources, use IAM user credentials (Iam keys)

How to connect these IAM keys from Snowflake and databricks explained in another document pls follow.

IAM Roles

If you want to access AWS access from another AWS service use IAM roles.

As a bigdata developer, 90% you are using IAM roles most frequently. Let eg:

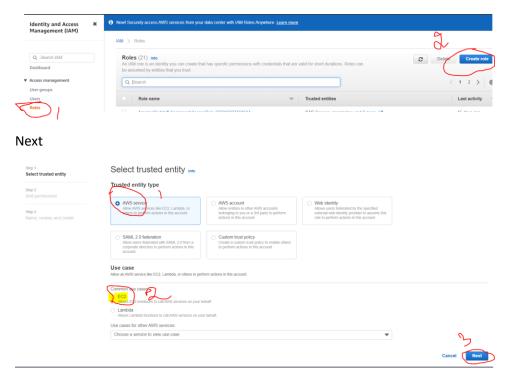
Glue want to access s3

Redshift want to access s3

Lambda want to access glue

Ec2 want to access s3

Use IAM roles in these scenario. The main reason EC2 , redshift, Glue, lambda and s3 are aws services. So aws service want to access another aws service use IAM Roles



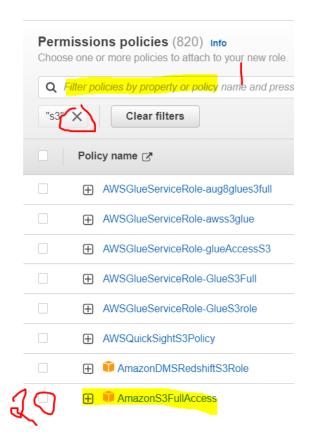
Type S3 .. choose s3 full privileges ... it means Ec2 want to access S3

At that time Ec2 had full privileges to access S3.

Step 1 Select trusted entity Step 2 Add permissions Step 3 Name, review, and create

Stop 1

Add permissions Info



Give any name to that role (relavent name highly recommended)

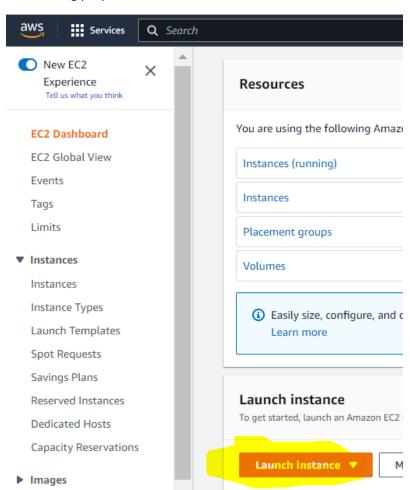
Select trusted entity	name, review, and creat
Step 2	Role details
Add permissions	
	Role name
Step 3	Enter a meaningful name to identify this role.
Name, review, and create	Ec2AccessS3
	Maximum 64 characters. Use alphanumeric and '+=,.@

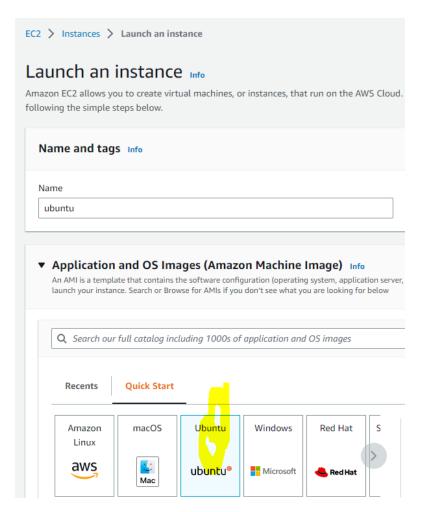


Verify IAM roles

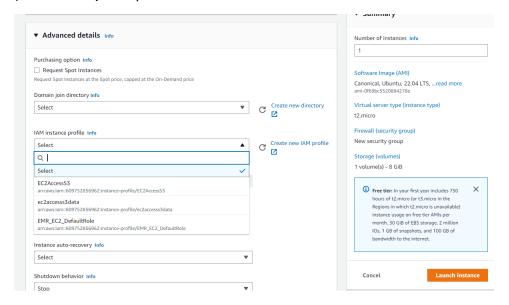


Now testing purpose create ec2





When you are creating emr below Advanced option available. Click and choose IAM role choose (EC2AccessS3) Finally click launch instance



Pic Name: IAM-role-assign

If u face any problem to connect ec2 follow ec2 document

Or follow this video to connect ec2 using putty

https://www.youtube.com/watch?v=Nu8u79o7qVI

sudo apt update its highly recommended

aws s3 ls is commonly used aws s3 command to display s3 buckets.

sudo apt install awscli ... used to run any command using command line interface.

```
ubuntu@ip-172-31-12-41:~$ #sudo apt update
ubuntu@ip-172-31-12-41:~$ aws s3 ls
Command 'aws' not found, but can be installed with:
sudo snap install aws-cli # version 1.15.58, or
sudo apt install awscli # version 1.22.34-1
See 'snap info aws-cli' for additional versions.
ubuntu@ip-172-31-12-41:~$ sudo apt install awscli
```

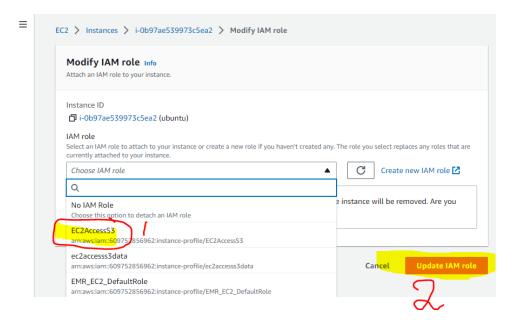
Now if you execute s3 commands it's not working. You will get access denied access or like this

Unable to locate credentials. You can configure credentials by running "aws configure". it means you don't have privileges to access. Ofcourse you can use IAM keys also but not recommended.

```
ubuntu@ip-172-31-12-41:~$ aws s3 ls
Unable to locate credentials. You can configure credentials by running "aw s configure".
ubuntu@ip-172-31-12-41:~$
```



Above you created IAM Role .. modify and assign to this ec2 server. At that time automatically this EC2 having all privileges to access S3.. Update with this.



Pls note: if you assign iam role (Pic Name: IAM-role-assign) earlier this step no need.

```
ubuntu@ip-172-31-12-41:~$ aws s3 ls
Unable to locate credentials. You car
  configure".
ubuntu@ip-172-31-12-41:~$ aws s3 ls
2022-07-16 06:01:35 aws-glue-assets-6
2021-08-01 02:25:33 aws-glue-scripts-
2021-08-01 02:25:34 aws-glue-temporar
2020-11-03 15:30:19 aws-logs-60975285
```

Now check you have full privileges to access S3 after assign IAM role...

Similarly Redshift access S3 explained in another document pls follow

Similarly Lambda access S3, glue explained in another document pls follow

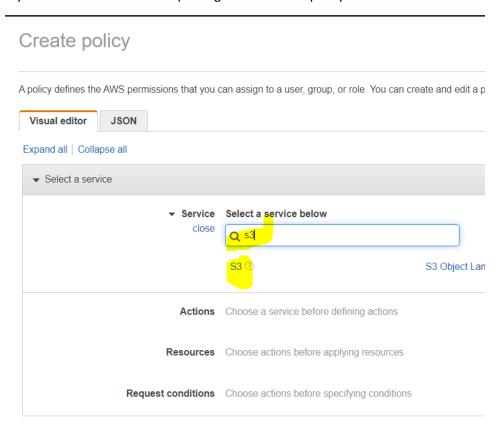
Similarly Glue access S3 explained in another document pls follow

IAM Policy

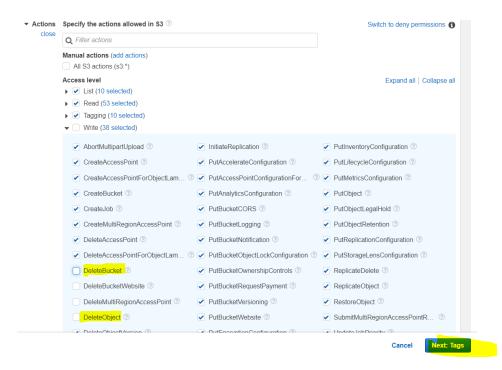
Policy nothing but collection of privileges to access different AWS Services. Hilighted yellow color box means by default aws assigned privileges.



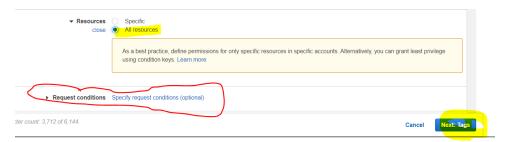
If you want to create ur own privileges click Create policy



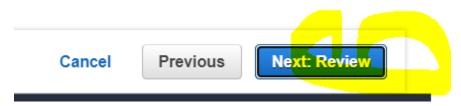
Now choose different privileges and uncheck appropriate



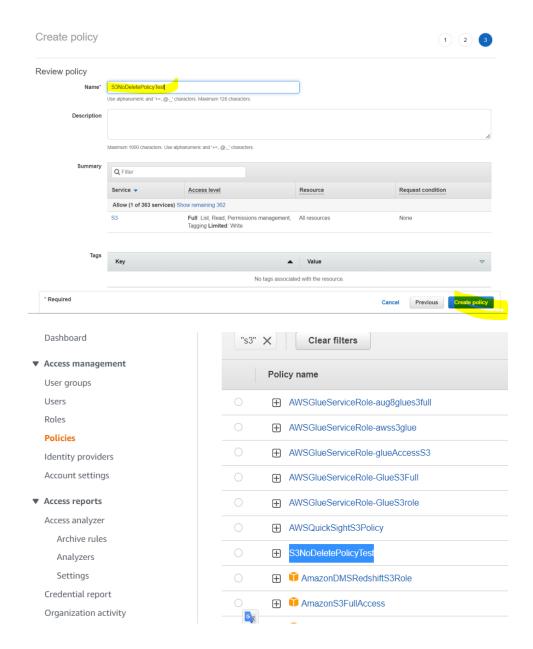
Now choose All resources (all aws services access this policies)



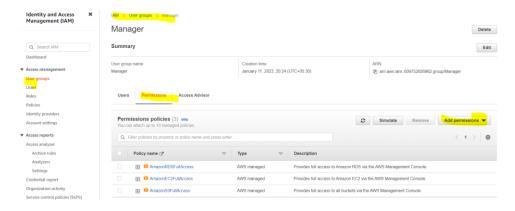
Tags always optional pls ignore



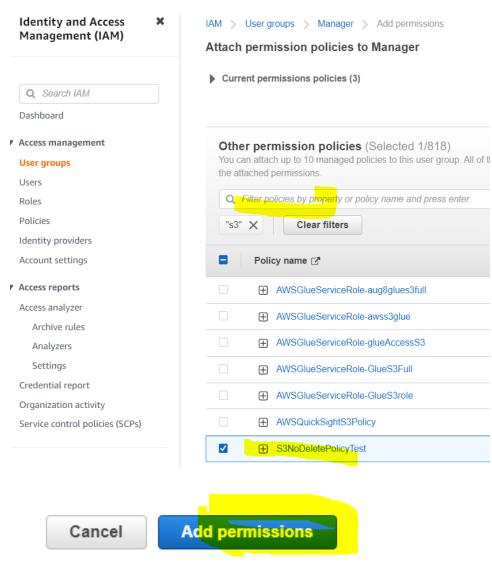
Now



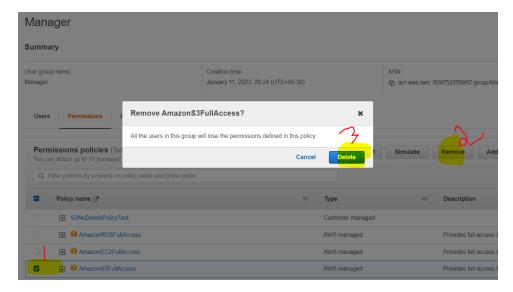
Now assign this policy to Manager group at that time you have all privileges except delete bucket, object privileges.



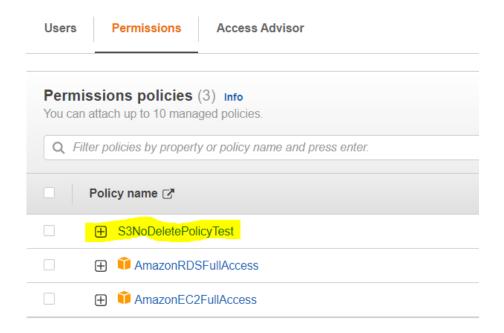
Like above add this customized privileges to this group



Now try to delete existing s3full privileges and add customized new privileges.



Now pls check new privileges



Now who is in manager group all employees have s3 full privileges except delete object privileges.

Notice? No yellow color box means it's user defined policy.