Write a script that backs up an SQL dump and uploads it to an S3 Bucket. The contents of the S3 bucket should not be accessible via public.

A script is made to backup our mysql database:

Nano backup.sh

```
  GNU nano 4.8                                                    backup.sh
NOW=$(date +"%Y-%m-%d")
NOW_TIME=$(date +"%Y-%m-%d %T %p")
NOW_MONTH=$(date +"%Y-%m")

MYSQL_HOST="localhost"
MYSQL_PORT="3306"
MYSQL_DATABASE="zabbixdb"
MYSQL_USER="zabbix"
MYSQL_PASSWORD="password"

BACKUP_DIR="/home/bj/aws/$NOW_MONTH"
BACKUP_FULL_PATH="$BACKUP_DIR/$MYSQL_DATABASE-$NOW.sql.gz"
AMAZON_S3_BUCKET="s3://intern-bijaykandel37/backup/$NOW_MONTH/"

mkdir -p ${BACKUP_DIR}

backup_mysql(){
       mysqldump -h ${MYSQL_HOST} \
         -P ${MYSQL_PORT} \
         -u ${MYSQL_USER} \
         -p${MYSQL_PASSWORD} ${MYSQL_DATABASE} --no-tablespaces | gzip > ${BACKUP_FULL_PATH}
}

upload_s3(){
      aws s3 cp ${BACKUP_FULL_PATH} ${AMAZON_S3_BUCKET}
}

backup_mysql
upload_s3
```

To schedule this script 3 times a day, ie. every 8 hours,

'Crontab -e' command is used and this part is appended at the end of the file:

* * */8 * * /path/to/script

```
# m h  dom mon dow   command
* * */8 * * /home/bj/aws/backup.sh > /dev/null 2>&1
```

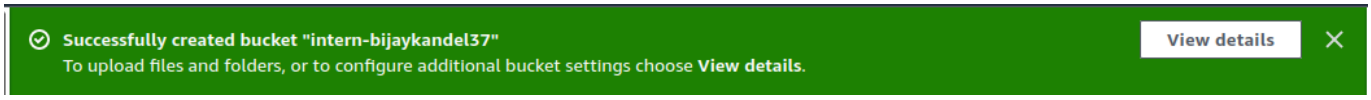
It can be verified by viewing our s3 bucket.

Name	Type	Last modified	Size	Storage class
zabbixdb-2021-12-11.sql.gz	gz	December 11, 2021, 18:43:29 (UTC+05:45)	3.9 MB	Standard
zabbixdb-2021-12-12.sql.gz	gz	December 12, 2021, 14:59:51 (UTC+05:45)	3.9 MB	Standard

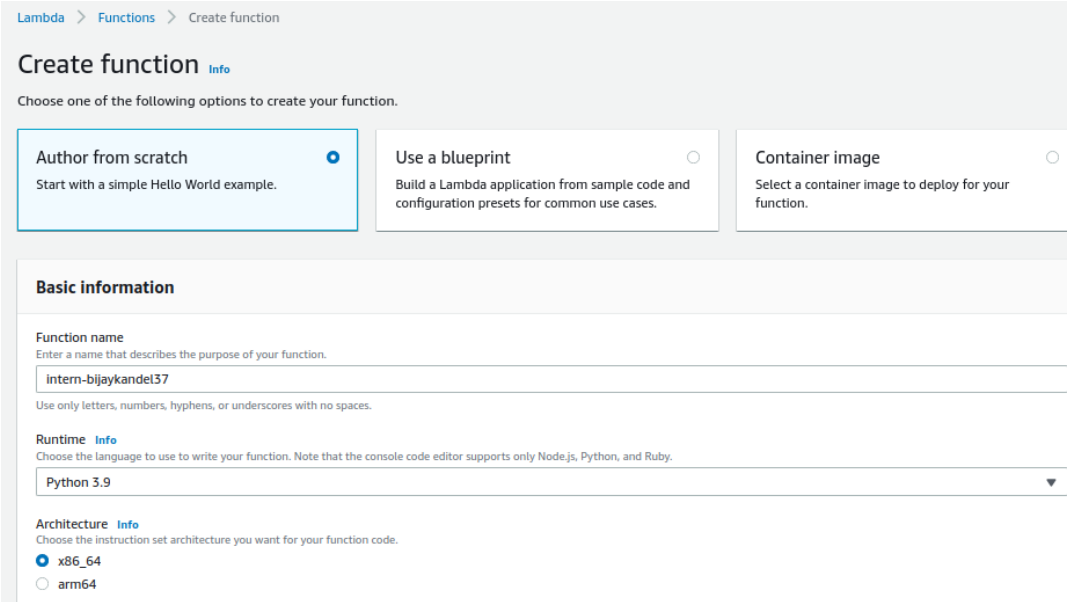
Create a Lambda function that is triggered by an object being uploaded to an S3 bucket. If the object's name starts with make_public, ensure that the object is publicly accessible.

To create a lambda function, we must already have a s3 bucket,

I created a bucket with name intern-bijaykandel37

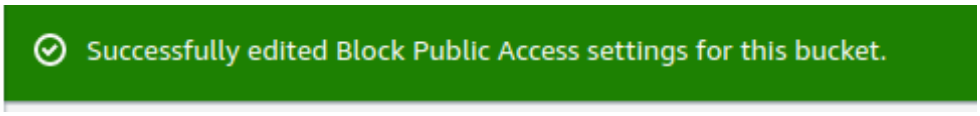


And created a lambda function,

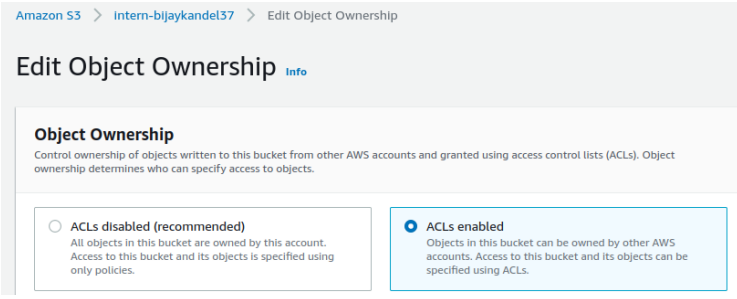


And access of the s3 bucket was edited:

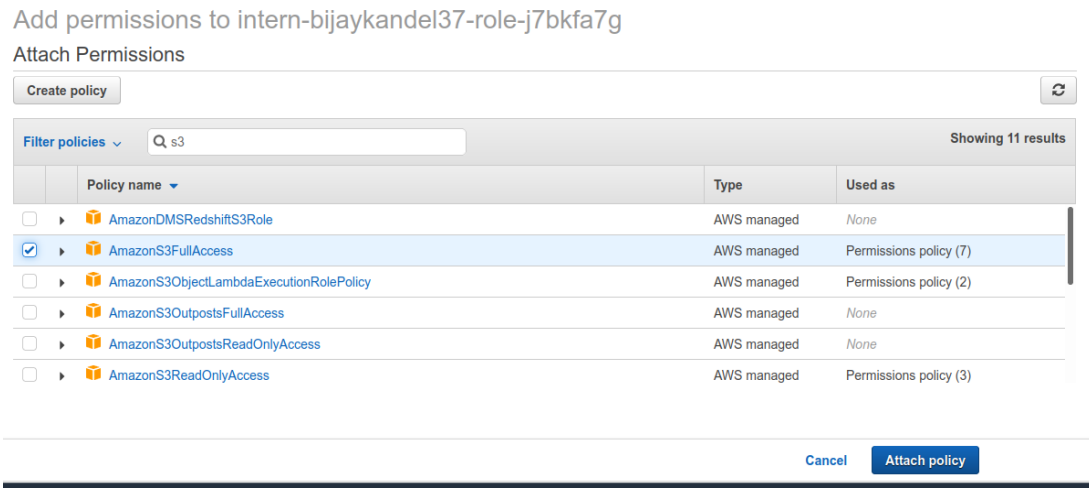
The **Block all Public Access** was unchecked.

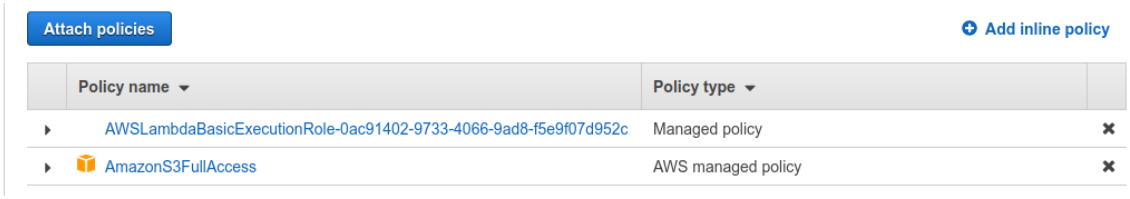


Under Edit Object ownership, ACLs are enabled:

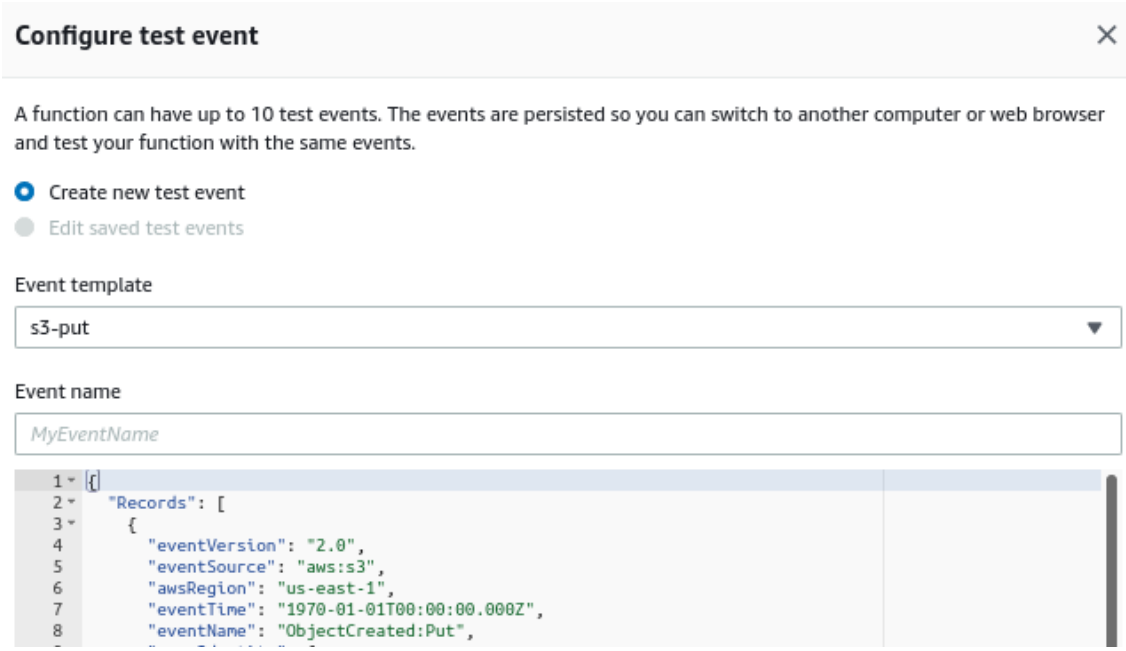


Permission to AmazonS3FullAccess is given to intern-bijaykandel37

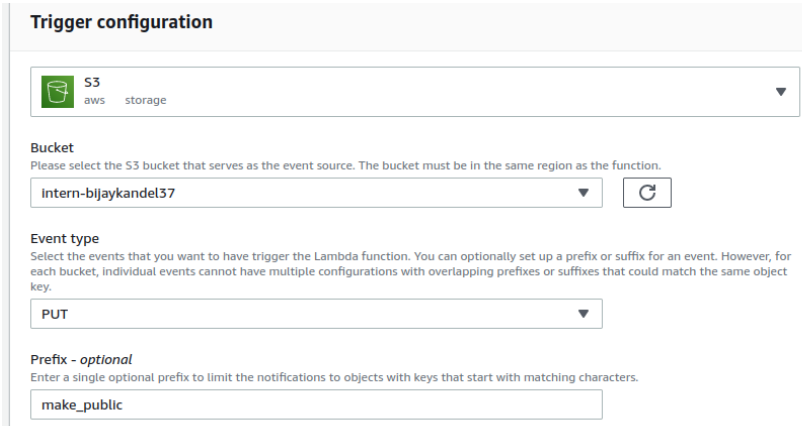




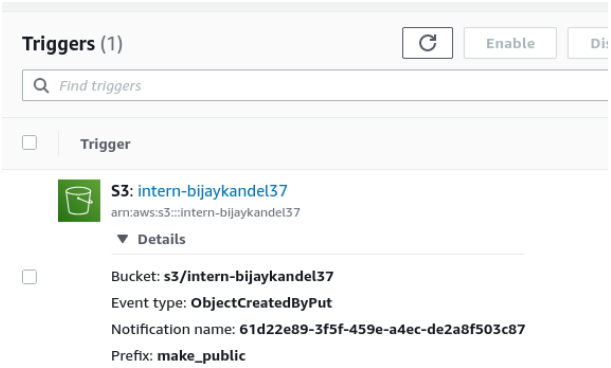
A simple test event is configured:



And then add an s3 trigger by clicking on '+ Add trigger'



After the trigger is added, it may show like this:



Now a lambda function is written:

```
ools  Window  Test  Deploy  Changes deployed
lambda_function ×  Execution results ×
1  import json
2  import boto3
3
4  s3bucket = "intern-bijaykandel37"
5  s3 = boto3.resource("s3")
6  #s3_client = boto3.client("s3")
7
8  def lambda_handler(event, context):
9      # TODO implement
10     bucketobject = event["Records"][0]["s3"]["object"]["key"]
11     obj = s3.ObjectAcl(s3bucket, bucketobject)
12
13     # 'body' : obj.Acl().put(ACL='public-read')
14
15     response = obj.put(ACL="public-read")
16
17     return response
18
```

This lambda function is triggered when an object with make_public prefix is uploaded to the s3 bucket which makes the uploaded content public.

Now, we created two backup scripts, each for private and public access.

This is script for private access:

```
  GNU nano 4.8                                          privatebackup.sh
NOW=$(date +"%Y-%m-%d")
NOW_TIME=$(date +"%Y-%m-%d %T %p")
NOW_MONTH=$(date +"%Y-%m")

MYSQL_HOST="localhost"
MYSQL_PORT="3306"
MYSQL_DATABASE="zabbixdb"
MYSQL_USER="zabbix"
MYSQL_PASSWORD="password"

BACKUP_DIR="/home/bj/aws/$NOW_MONTH"
BACKUP_FULL_PATH="$BACKUP_DIR/$MYSQL_DATABASE-$NOW.sql.gz"
AMAZON_S3_BUCKET="s3://intern-bijaykandel37/"

mkdir -p ${BACKUP_DIR}

backup_mysql(){
       mysqldump -h ${MYSQL_HOST} \
         -P ${MYSQL_PORT} \
         -u ${MYSQL_USER} \
         -p${MYSQL_PASSWORD} ${MYSQL_DATABASE} --no-tablespaces | gzip > ${BACKUP_FULL_PATH}
}

upload_s3(){
      aws s3 cp ${BACKUP_FULL_PATH} ${AMAZON_S3_BUCKET}
}

backup_mysql
upload_s3
```

And below is the script for public access, which can be seen in BACKUP_FULL_PATH with make_public prefix.

```
  GNU nano 4.8                                                    publicbackup.sh
NOW=$(date +"%Y-%m-%d")
NOW_TIME=$(date +"%Y-%m-%d %T %p")
NOW_MONTH=$(date +"%Y-%m")

MYSQL_HOST="localhost"
MYSQL_PORT="3306"
MYSQL_DATABASE="zabbixdb"
MYSQL_USER="zabbix"
MYSQL_PASSWORD="password"

BACKUP_DIR="/home/bj/aws/$NOW_MONTH"
BACKUP_FULL_PATH="$BACKUP_DIR/make_public_$MYSQL_DATABASE-$NOW.sql.gz"
AMAZON_S3_BUCKET="s3://intern-bijaykandel37/"

mkdir -p ${BACKUP_DIR}

backup_mysql(){
       mysqldump -h ${MYSQL_HOST} \
         -P ${MYSQL_PORT} \
         -u ${MYSQL_USER} \
         -p${MYSQL_PASSWORD} ${MYSQL_DATABASE} --no-tablespaces | gzip > ${BACKUP_FULL_PATH}
}

upload_s3(){
      aws s3 cp ${BACKUP_FULL_PATH} ${AMAZON_S3_BUCKET}
}

backup_mysql
upload_s3
```

To run the scripts,

./privatebackup.sh

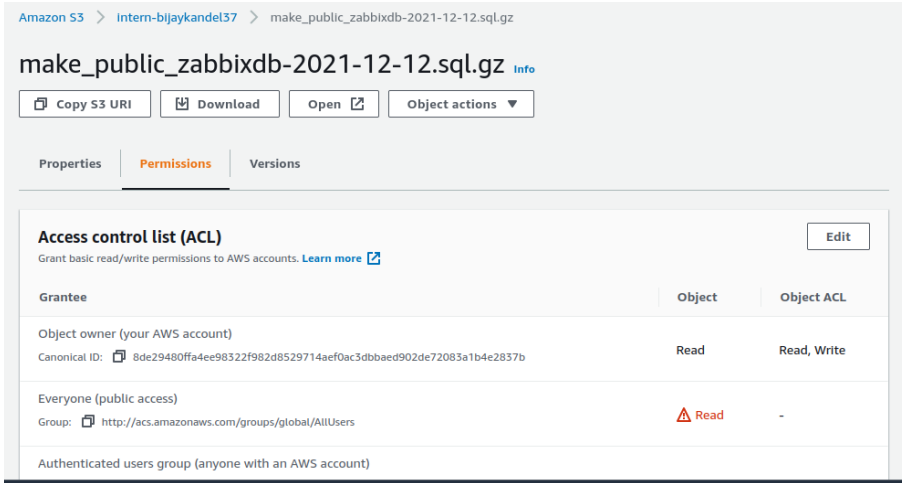
./publicbackup.sh

```
bj@batman:~/aws$ ./privatebackup.sh
mysqldump: [Warning] Using a password on the command line interface can be insecure.
upload: 2021-12/zabbixdb-2021-12-12.sql.gz to s3://intern-bijaykandel37/zabbixdb-2021-12-12.sql.gz
bj@batman:~/aws$ ./publicbackup.sh
mysqldump: [Warning] Using a password on the command line interface can be insecure.
upload: 2021-12/make_public_zabbixdb-2021-12-12.sql.gz to s3://intern-bijaykandel37/make_public_zabbixdb-2021-12-12.sql.gz
bj@batman:~/aws$
```

And in the s3 bucket, we can see the uploaded items:

Name	Type	Last modified	Size	Storage class
backup/	Folder	-	-	-
make_public_zabbixdb-2021-12-12.sql.gz	gz	December 12, 2021, 22:44:20 (UTC+05:45)	3.9 MB	Standard
zabbixdb-2021-12-12.sql.gz	gz	December 12, 2021, 22:44:09 (UTC+05:45)	3.9 MB	Standard

One is with make_public prefix which is uploaded from publicbackup.sh with Read permission to the public.



One is with no prefix which is uploaded from privatebackup.sh with no Read permission to the public.