Doubt Resolving

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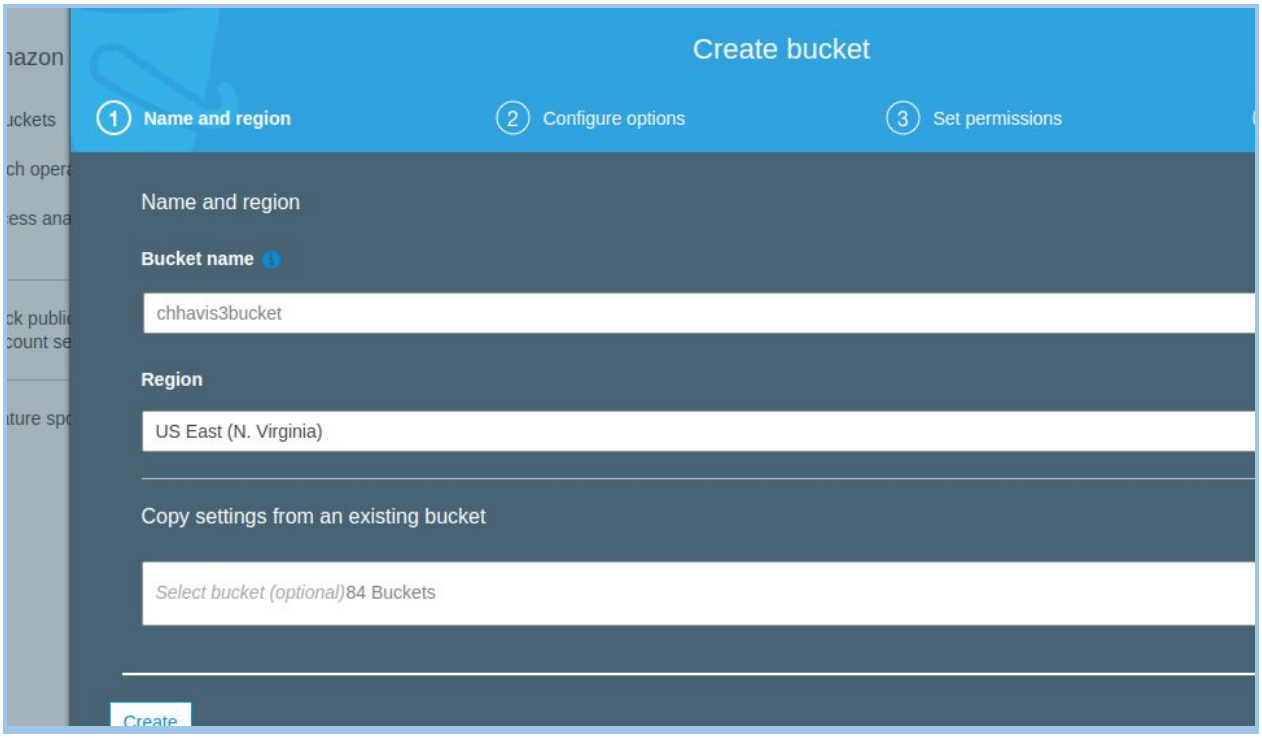
Newers ID : 4023
College : UPES

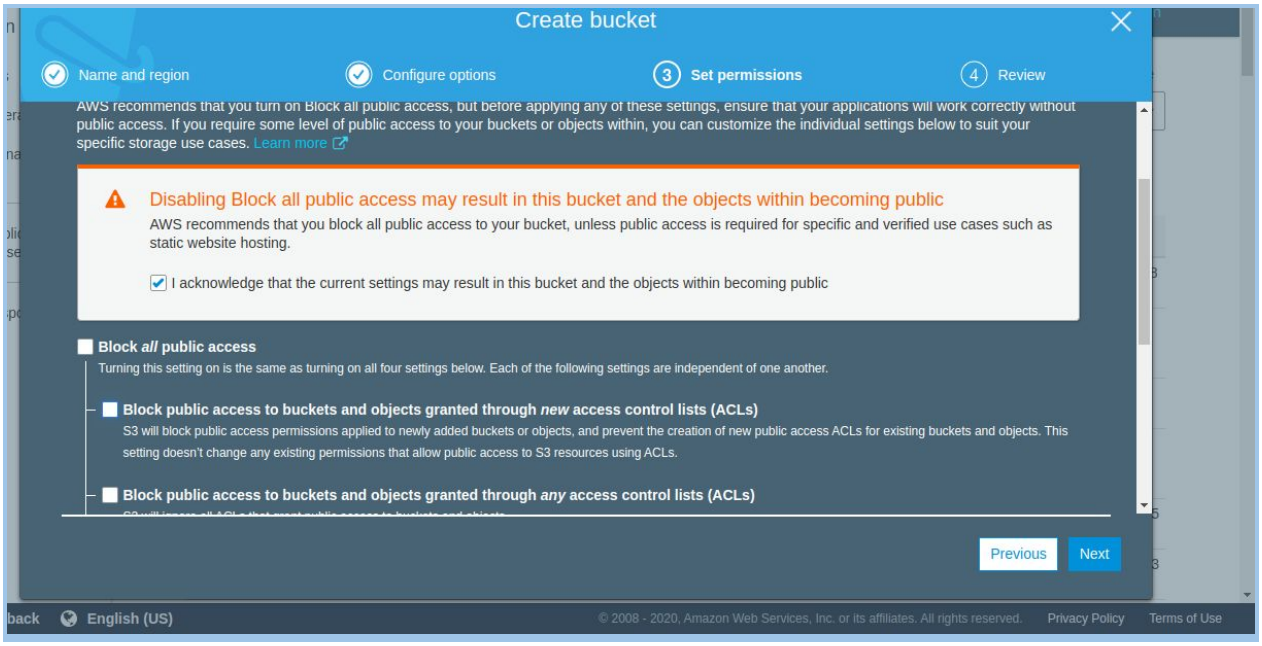
1. Static website hosting using s3(what is index and error page).

Ans.

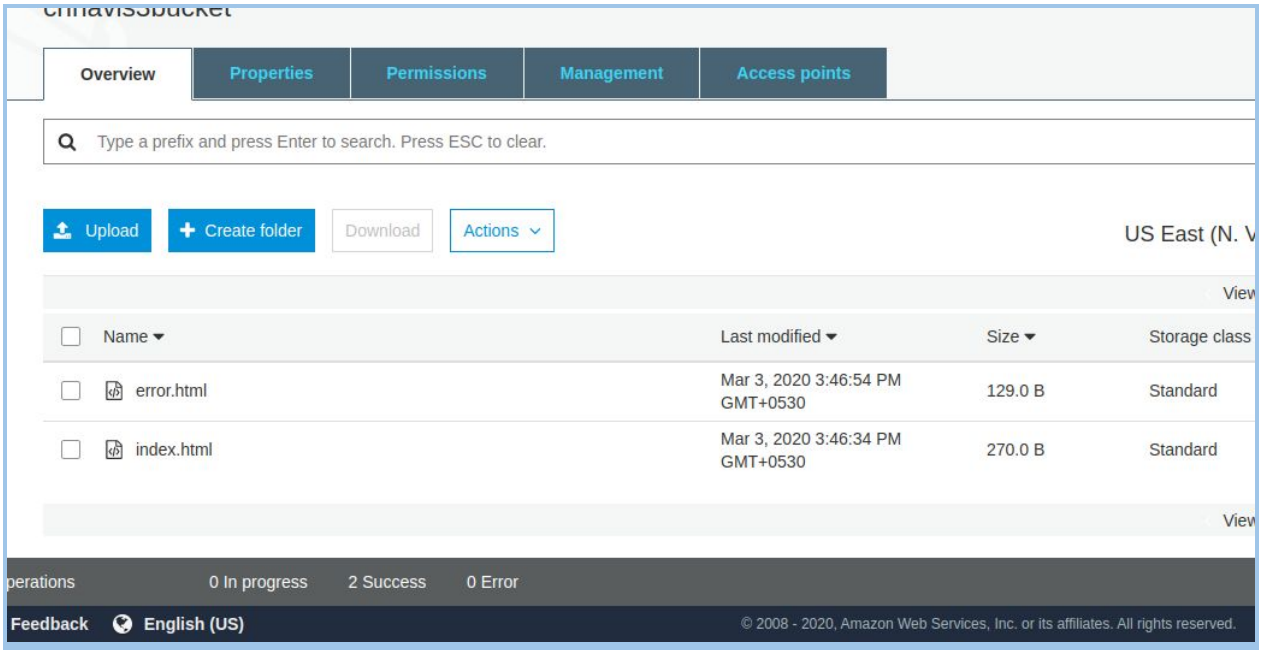
Step 1: Create a S3 bucket.



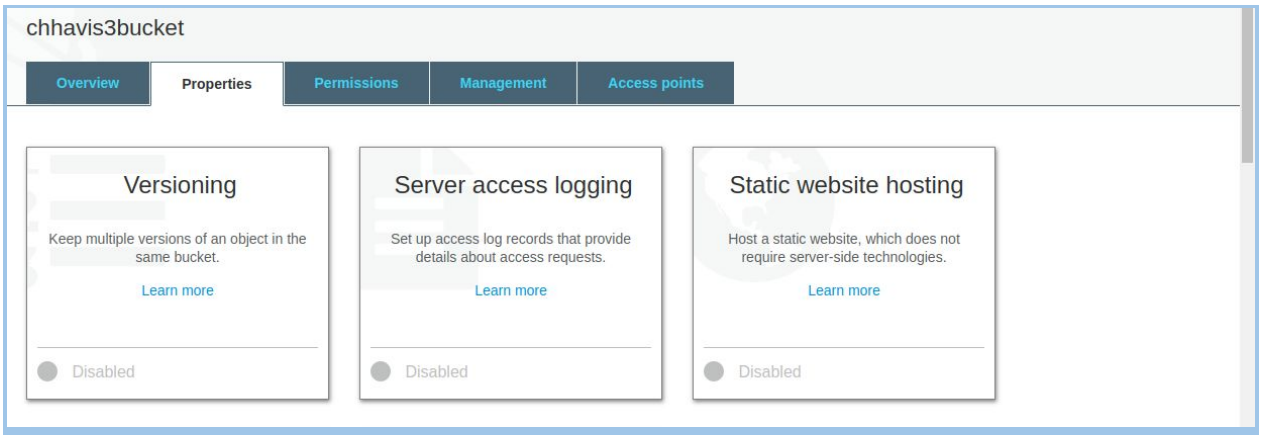
Step 2: Allow public access.



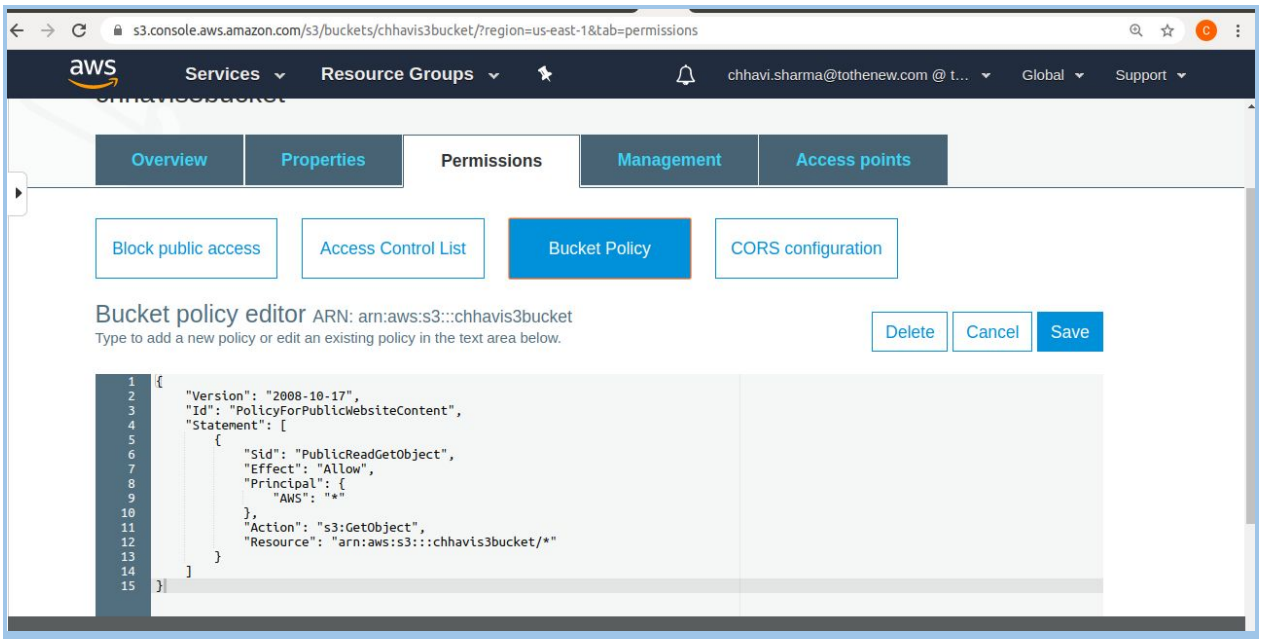
Step 3: Add index.html and error.html



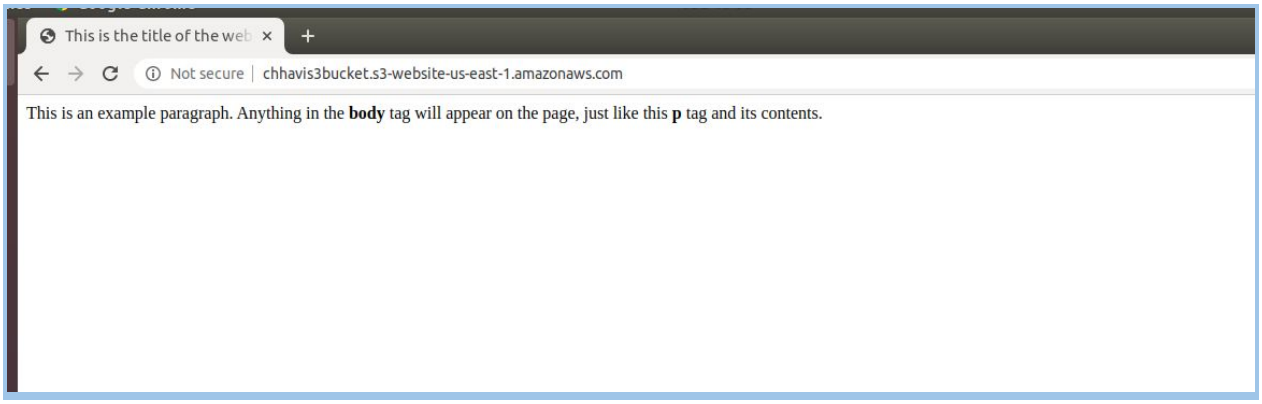
Step 4: Go to the properties and select static website hosting.



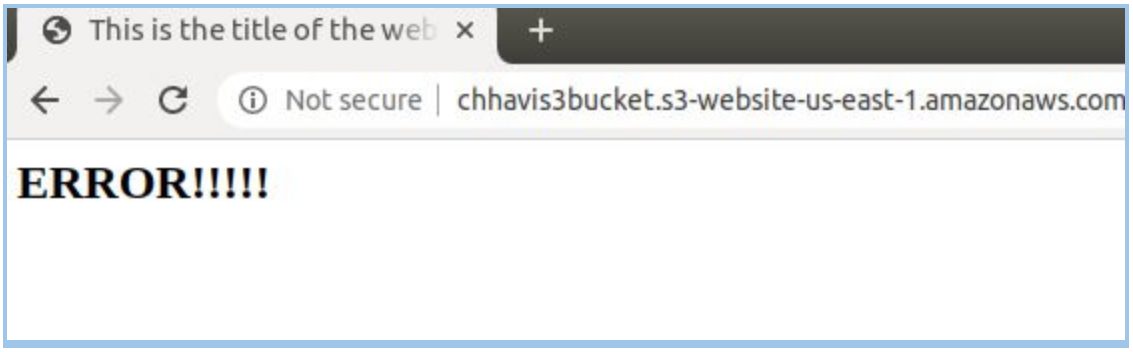
Step 5: Now create a policy and add public read access policy.



Step 6: Now copy the link and paste in the url.
Index.html will open by default.



If you provide a non existing url, then an error page will be displayed.

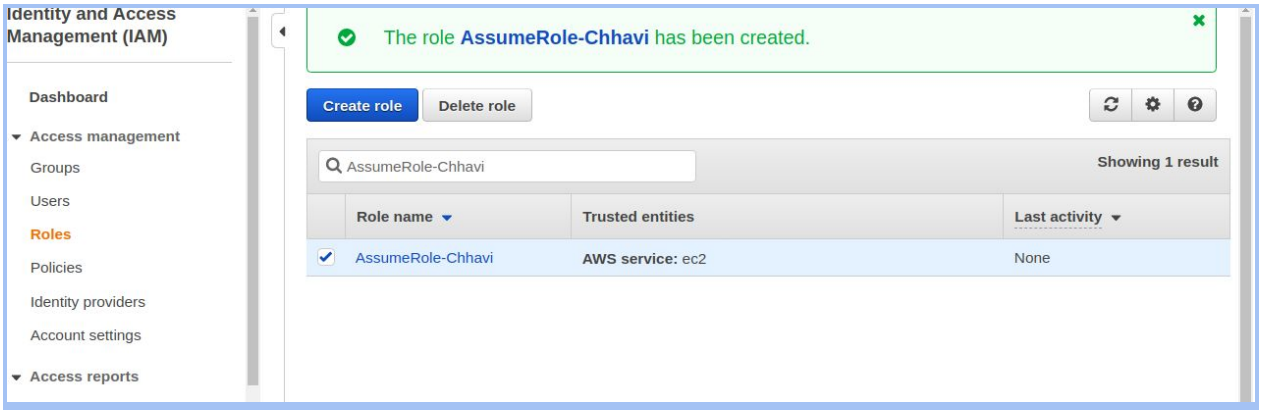


The index page is the first page that is served .The error.html is the page that is served whenever an error such as a non existing page is requested.

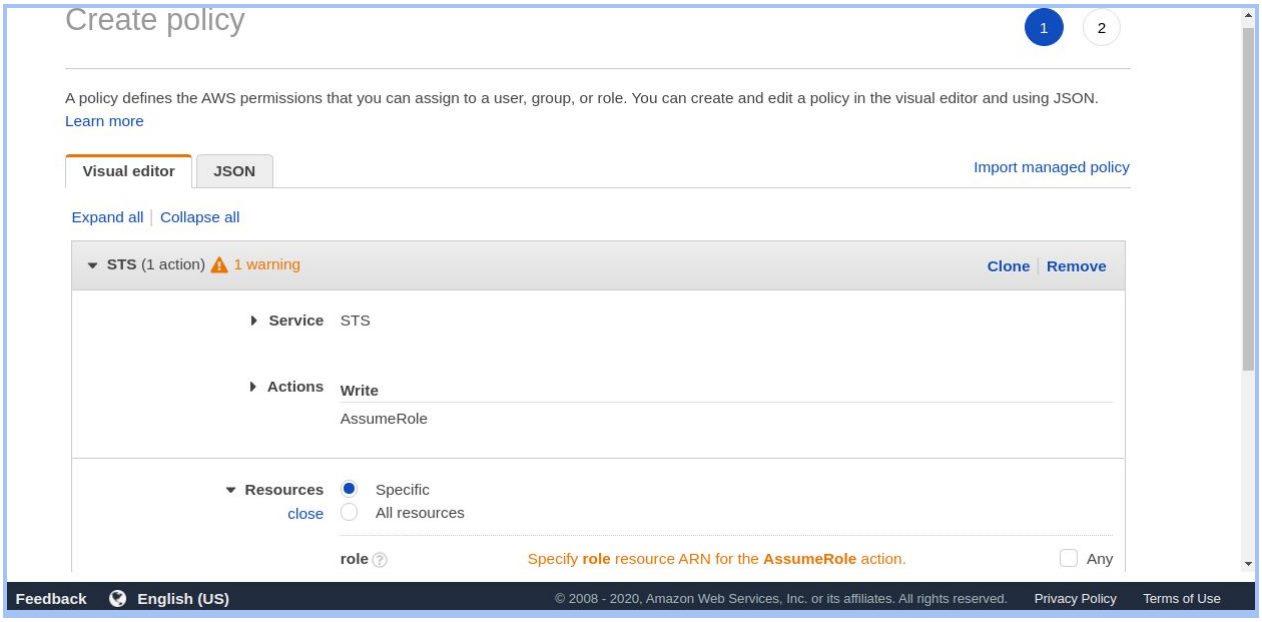
2. Create an assume role to access s3 using ec2.

Ans.

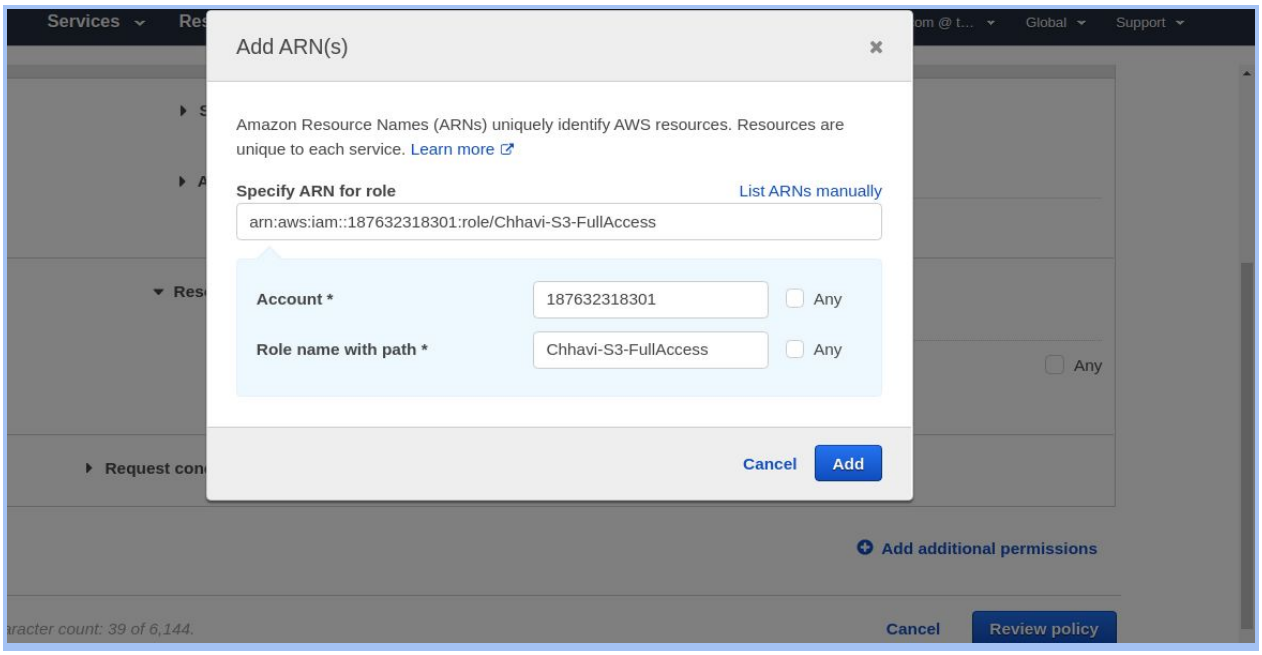
Step 1: Create a new role.

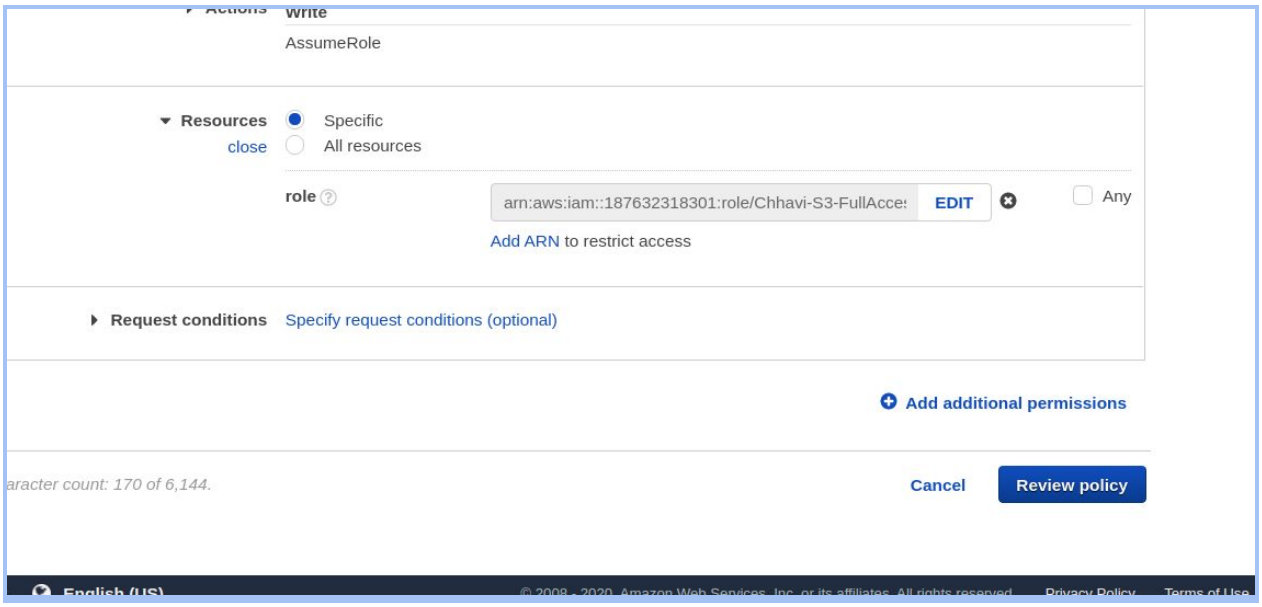


Step 2: Create a new policy.Select STS service.Select Assume role Action.

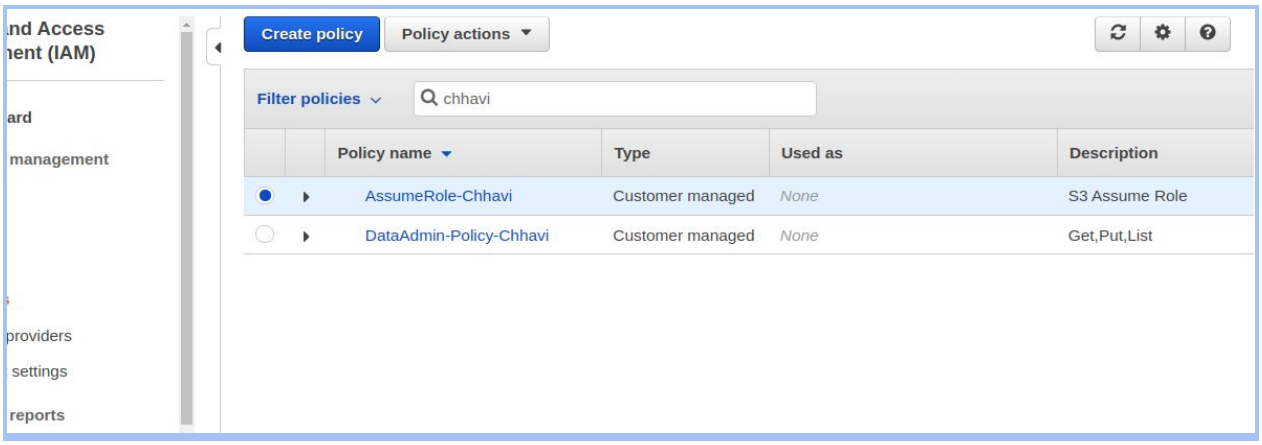


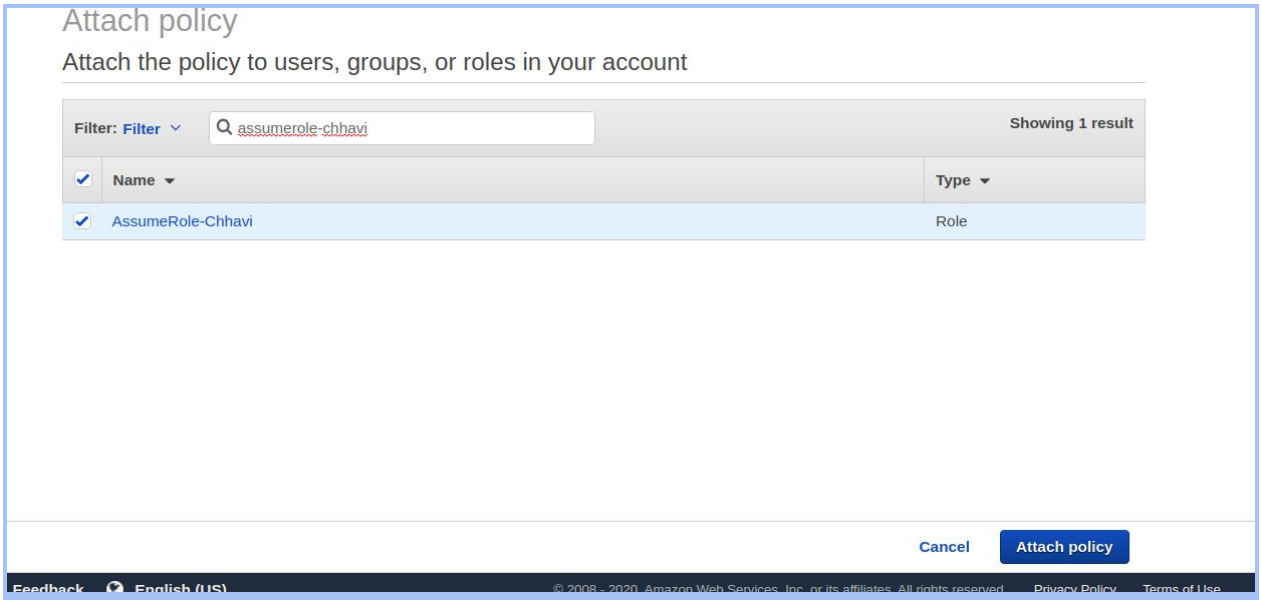
Step 3: Add previous policy's ARN



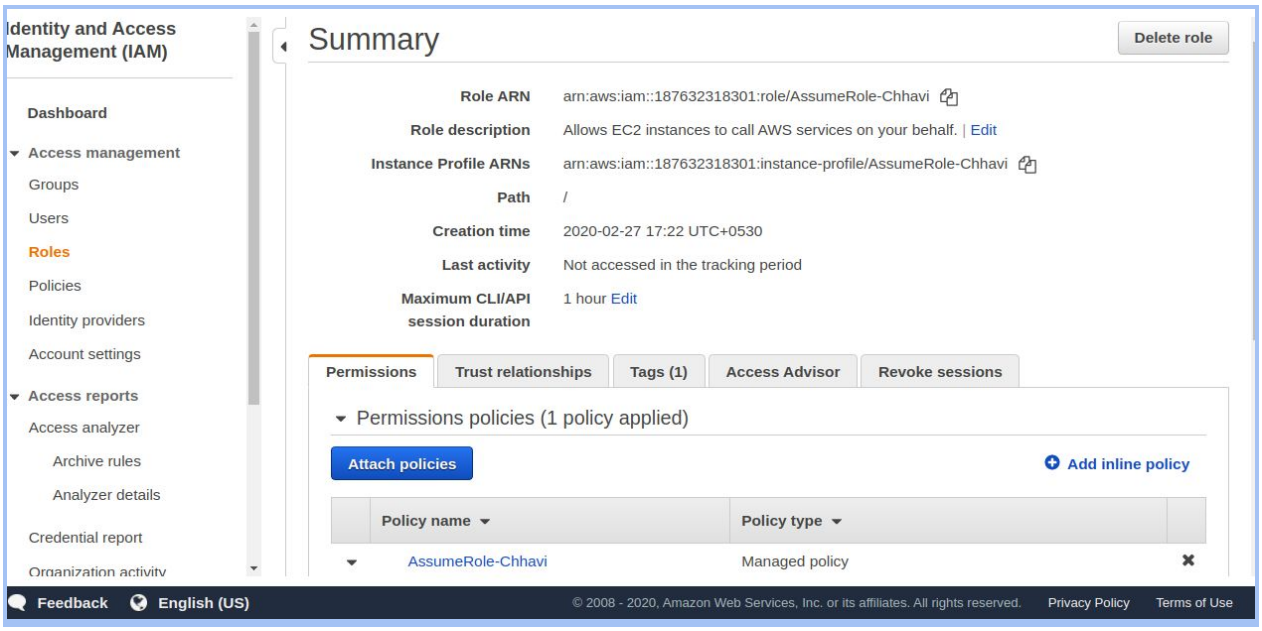


Step 4: Attach new policy to new role created.



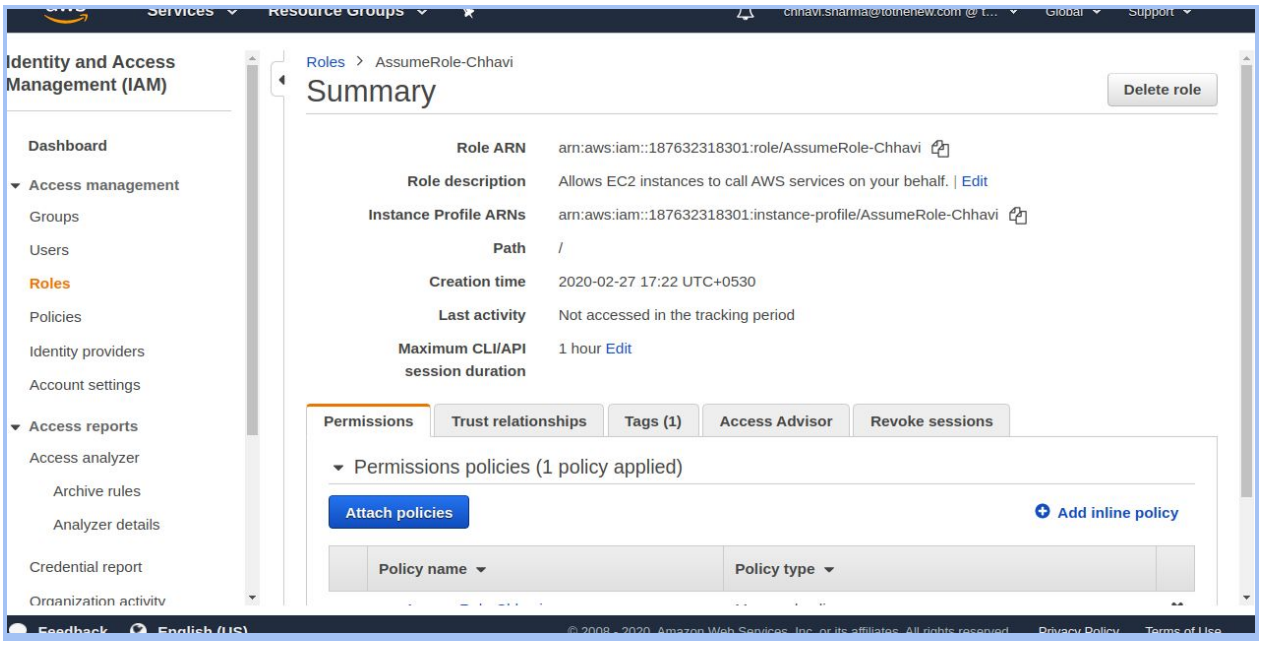


Step 5: Check New role's summary

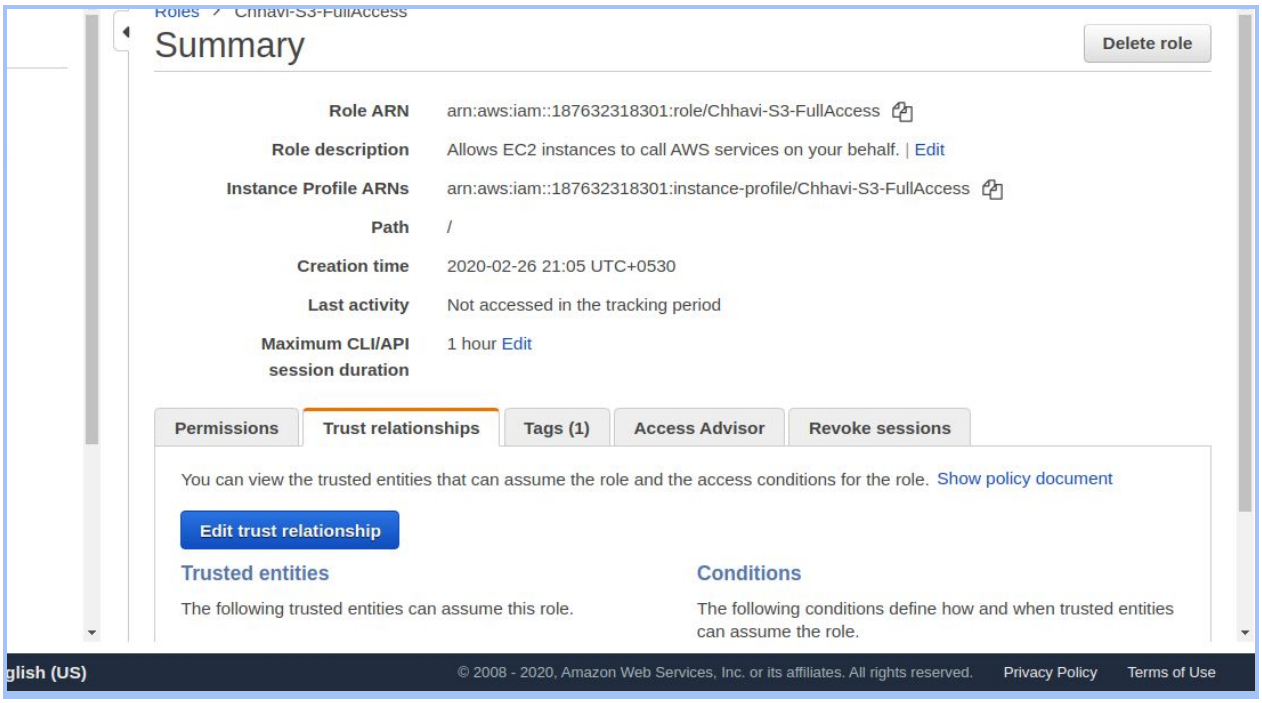


You can see the assumed role attached

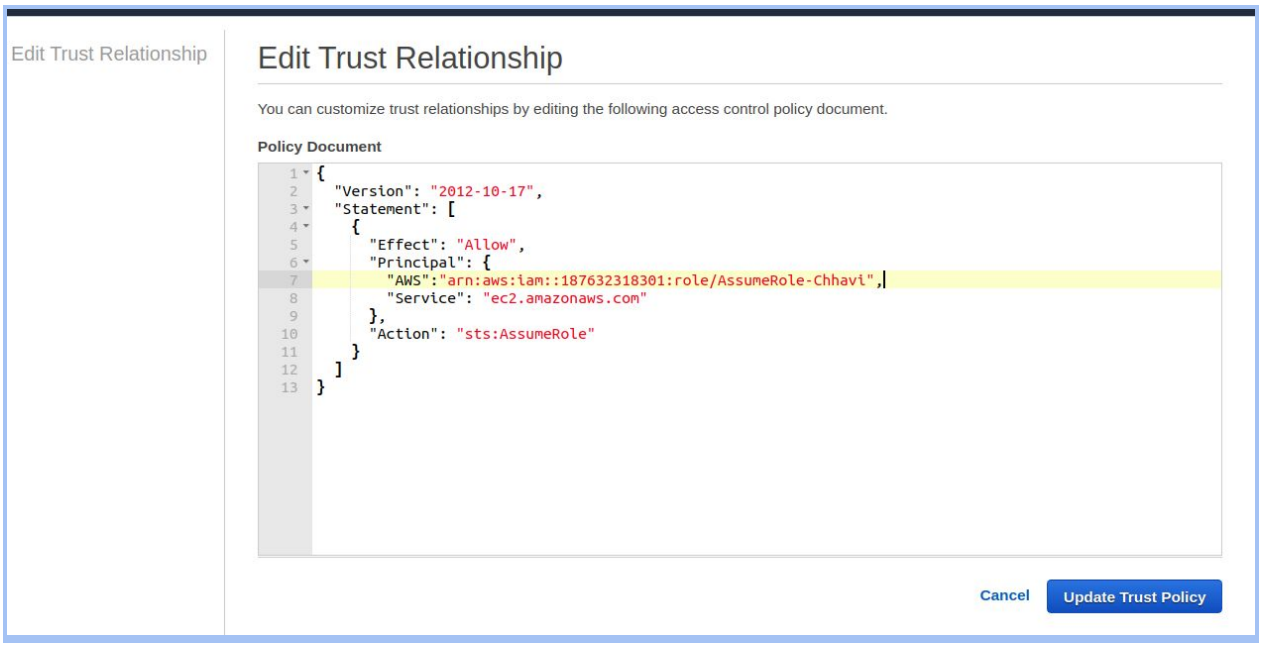
Copy the ARN of assume role .

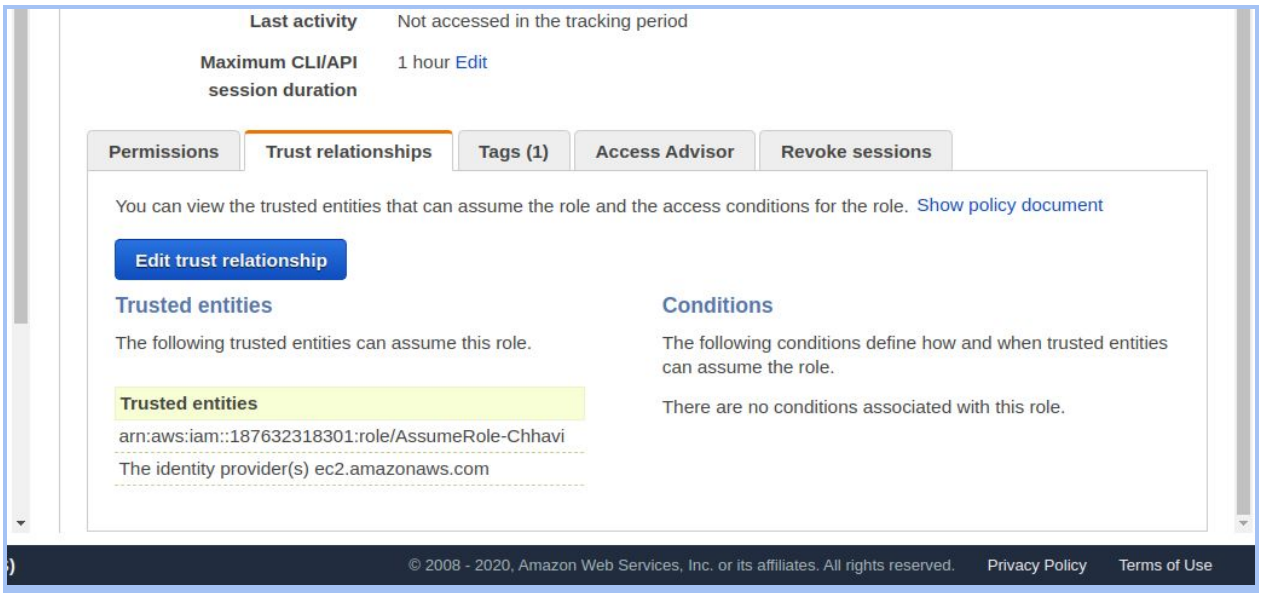


Goto Trust Relationship Tab in the previous policy.

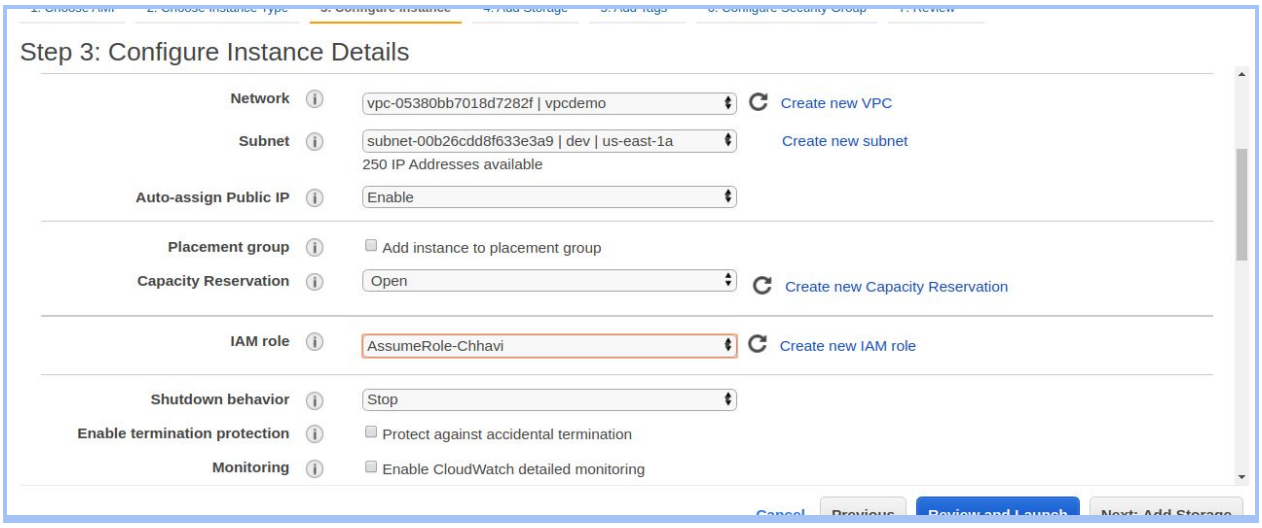


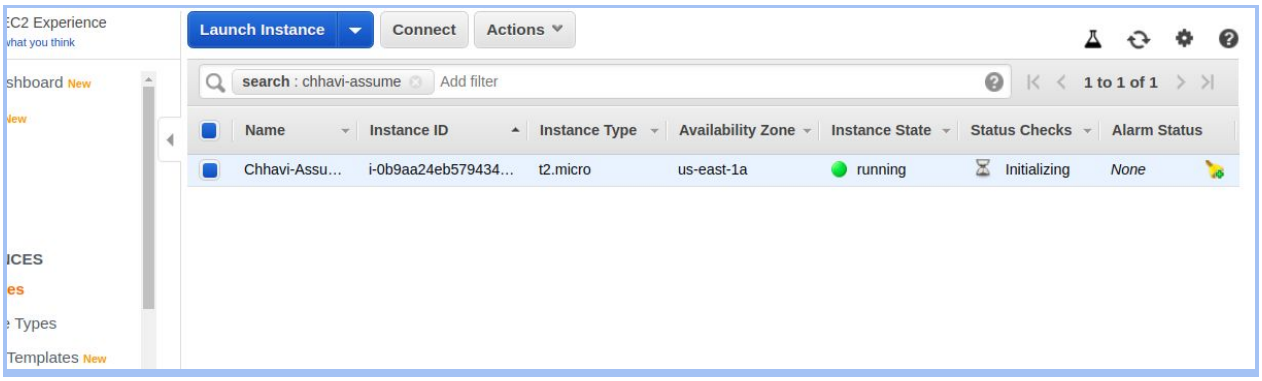
Edit the Trust Relationship of the previous role created.Add the ARN of the assume role created.





Now create a new instance.Chhavi-AssumeRole-Instanceand attach AssumeRole-Chhavi to the instance in the configuration.





Ssh into the instance created.Install awscli.

```
Connection to 54.234.206.71 closed.
chhavi@chhavi:~/docker$ sudo ssh -i /home/chhavi/Downloads/chhavi-ec2-assessment.pem ubuntu@54.234.206.71
Welcome to Ubuntu 18.04.3 LTS (GNU/Linux 4.15.0-1057-aws x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:     https://landscape.canonical.com
 * Support:        https://ubuntu.com/advantage

  System information as of Fri Feb 28 11:55:03 UTC 2020

  System load:  0.87              Processes:           89
  Usage of /:   13.8% of 7.69GB   Users logged in:     0
  Memory usage: 15%               IP address for eth0: 10.0.2.243
  Swap usage:   0%


0 packages can be updated.
0 updates are security updates.


Last login: Fri Feb 28 11:54:22 2020 from 182.71.160.186
To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

ubuntu@ip-10-0-2-243:~$
```

Generate an sts token.

```
ubuntu@ip-10-0-2-243:~$ aws sts assume-role --role-arn arn:aws:iam::187632318301:role/Chhavi-S3-FullAccess
--role-session-name chhaviststoken
{
    "Credentials": {
        "AccessKeyId": "ASIASXL6B65OQRLQTPDF",
        "SecretAccessKey": "MPUnLCRcx9Na7qIJhxKXbNx2CcNSEKHjKFf7voZn",
        "SessionToken": "IQoJb3JpZ2luX2VjEA0aCXVzLWVhc3QtMSJGMEQCIH7HRcMylj4KgIBoCrD7bTO2wdn75KosptNtoJytor
q4AiBnYjhEGtHAQCBXY9NK+bEXu28KeT0D0SAU2ZjRwKdHdSreAQjV//////////8BEAIaDDE4NzYzMjMxODMwMSIMdPgJUWWVz5y7W4jpK
rIBPnWSPruSRlWQp/Vyp3/yeF74Qgff+yMY7ZhqC9r9K9/Grydrx1bM5gYwYt4PbZ9vRT7+LcsPwVR3e3+l964AaHBfL7qcq0UxZpwhR9qf
/hDfjd4FrcrCMFQ9R50JcbOyNWIB1VGQ4/8iqR8icGUTUUHPPrL6BjrhCEmq5SdN7bzzZb6q1uodWbPLi/1wh3jORVTun9OVEluvXpMyYqH
OU8rW+SoqFKtf8lUW6n1o29okgTC9iuTyBTrkASv8SDlp0T8vjRrVAEdwh7iWU+oCBTIO5UrDrl7UUbPSibwgHNeK6kxh1W1Qdxn8piuULG
C9IJFbJ04xHcmANlqSufaXQ+kpG3mGZbM2UEm5jWOmXKVOr/fxFWQxxlRh2ChWKBsPT8kQ+1mPIK8BvxEKgEpM1Sxs1ap27OzeVxEDAs9Oq
zKgB98A2+Cc02fNl8rOTvjgCjOv+4NYelqmYZJZnoB2QnzecE/Gc0EzOu6eLnxBQ5uqdAbzIEvwtrs87Spkj4ZzE0O+Hz8Q/0JUXJdZ2wxr
3ilQRYFwWtD8yJ7TY91niw==",
        "Expiration": "2020-02-28T13:19:09+00:00"
    },
    "AssumedRoleUser": {
        "AssumedRoleId": "AROASXL6B65O7H67PBCRZ:chhaviststoken",
        "Arn": "arn:aws:sts::187632318301:assumed-role/Chhavi-S3-FullAccess/chhaviststoken"
    }
}
ubuntu@ip-10-0-2-243:~$
```

Export access key id , secret access key and token.

```
ubuntu@ip-10-0-2-243:~$ export AWS_ACCESS_KEY_ID=ASIASXL6B65OQRLQTPDF
ubuntu@ip-10-0-2-243:~$ export AWS_SECRET_ACCESS_KEY=MPUnLCRcx9Na7qIJhxKXbNx2CcNSEKHjKFf7voZn
```

```
ubuntu@ip-10-0-2-243:~$ export AWS_SESSION_TOKEN=IQoJb3JpZ2luX2VjEA0aCXVzLWVhc3QtMSJGMEQCIH7HRcMylj4KgIBoCr
D7bTO2wdn75KosptNtoJytorq4AiBnYjhEGtHAQCBXY9NK+bEXu28KeT0D0SAU2ZjRwKdHdSreAQjV//////////8BEAIaDDE4NzYzMjMxO
DMwMSIMdPgJUWWVz5y7W4jpKrIBPnWSPruSRlWQp/Vyp3/yeF74Qgff+yMY7ZhqC9r9K9/Grydrx1bM5gYwYt4PbZ9vRT7+LcsPwVR3e3+l
964AaHBfL7qcq0UxZpwhR9qf/hDfjd4FrcrCMFQ9R50JcbOyNWIB1VGQ4/8iqR8icGUTUUHPPrL6BjrhCEmq5SdN7bzzZb6q1uodWbPLi/1
wh3jORVTun9OVEluvXpMyYqHOU8rW+SoqFKtf8lUW6n1o29okgTC9iuTyBTrkASv8SDlp0T8vjRrVAEdwh7iWU+oCBTIO5UrDrl7UUbPSib
wgHNeK6kxh1W1Qdxn8piuULGC9IJFbJ04xHcmANlqSufaXQ+kpG3mGZbM2UEm5jWOmXKVOr/fxFWQxxlRh2ChWKBsPT8kQ+1mPIK8BvxEKg
EpM1Sxs1ap27OzeVxEDAs9OqzKgB98A2+Cc02fNl8rOTvjgCjOv+4NYelqmYZJZnoB2QnzecE/Gc0EzOu6eLnxBQ5uqdAbzIEvwtrs87Spk
j4ZzE0O+Hz8Q/0JUXJdZ2wxr3ilQRYFwWtD8yJ7TY91niw==
```

Aws configure.

```
ubuntu@ip-10-0-2-243:~$ aws configure
AWS Access Key ID [None]: ASIASXL6B65OQRLQTPDF
AWS Secret Access Key [None]: MPUnLCRcx9Na7qIJhxKXbNx2CcNSEKHjKFf7voZn
Default region name [None]:
Default output format [None]:
```

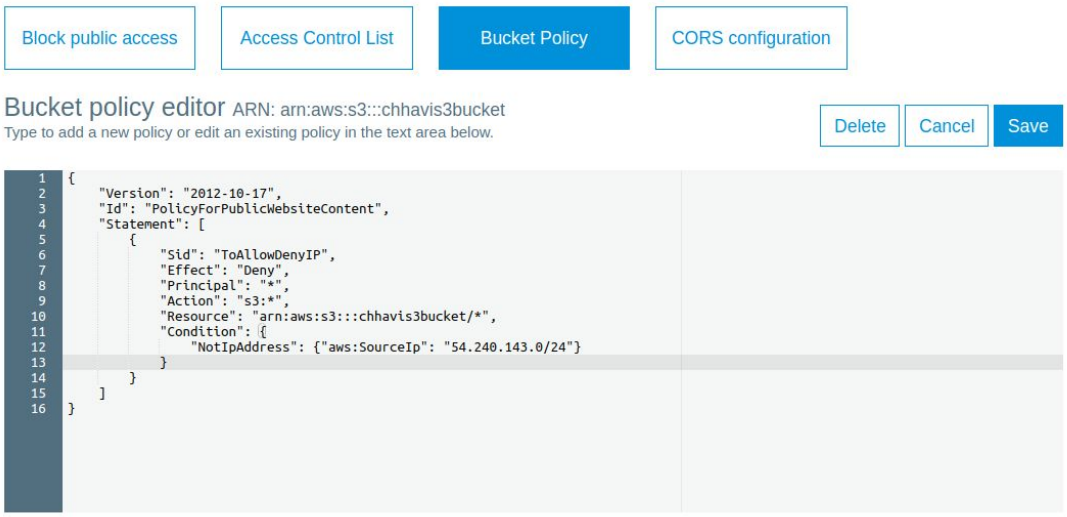
Now write aws s3 ls.

```
ubuntu@ip-10-0-2-243:~$ aws s3 ls
2019-06-26 12:11:08 0testuser11
2018-04-20 16:59:22 187632318301-awsmacietrail-dataevent
2019-04-02 10:11:33 7testdemo
2019-03-11 04:51:59 abhimanyucftemplate
2020-02-28 10:55:02 abhishek-bootcamp
2019-03-04 06:55:23 abneesh1
2019-03-11 11:00:41 adityamun007
2020-02-26 16:26:29 akshaybuck1
2020-02-27 08:55:25 aman-khandelwal-1
2019-03-07 09:40:48 anmol-bootcamp19
2019-03-08 00:25:58 avcabc
2017-09-07 03:41:42 aws-codestar-us-east-1-187632318301
2017-09-07 04:23:01 aws-codestar-us-east-1-187632318301-codestartest2-app
2017-09-07 04:23:07 aws-codestar-us-east-1-187632318301-codestartest2-pipe
2017-09-07 03:41:48 aws-codestar-us-east-1-187632318301-codestarttest-pipe
2019-06-26 05:39:55 aws-lambda-trigger-ronozor
2020-02-28 03:56:49 ayush-public-bucket
2020-02-25 07:02:11 baban-123
2018-02-14 12:28:43 cf-templates-71mx96ojlvv5-us-east-1
2019-03-27 15:57:27 cfront1
2020-02-26 11:51:54 chirag-bucket-2
2020-02-26 11:46:43 chirag-bucket1
2019-03-27 20:34:52 cloudfront8
2020-02-25 10:59:18 copy-test-delete
```

3. Block s3 access on the basis of

i. IP

Ans.



ii. Domain

Ans.

Bucket policy editor ARN: arn:aws:s3:::chhavis3bucket

Type to add a new policy or edit an existing policy in the text area below.

Delete Cancel Save

```
{
    "Version": "2012-10-17",
    "Id": "PolicyForPublicWebsiteContent",
    "Statement": [
        {
            "Sid": "Allow get requests originating from http://chhavis3bucket.s3-website-us-east-1.amazonaws.com/ ",
            "Effect": "Allow",
            "Principal": "*",
            "Action": "s3:GetObject",
            "Resource": "arn:aws:s3:::chhavis3bucket/*",
            "Condition": {
                "StringLike": {
                    "aws:Referer": [
                        "http://chhavis3bucket.s3-website-us-east-1.amazonaws.com/*"
                    ]
                }
            }
        }
    ]
}/*
```

Documentation Policy generator

iii. Pre-signed URL(Time based)

Ans. A Pre-signed URL is the one that you can provide to your users to grant temporary access to a specific S3 object. Using the URL, a user can either READ the object or WRITE an Object (or update an existing object). THe URL contains specific parameters which are set by your application.

1. Bucket: The bucket that the object is in (or will be in)
2. Key: The name of the object.
3. Expires: THe amount of time that the URL is valid for.

Bucket policy editor ARN: arn:aws:s3:::chhavis3bucket

Type to add a new policy or edit an existing policy in the text area below.

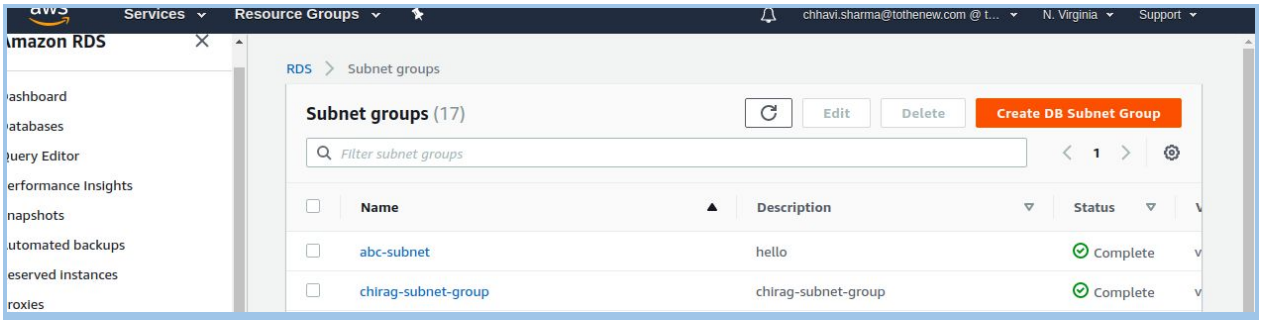
Delete Cancel Save

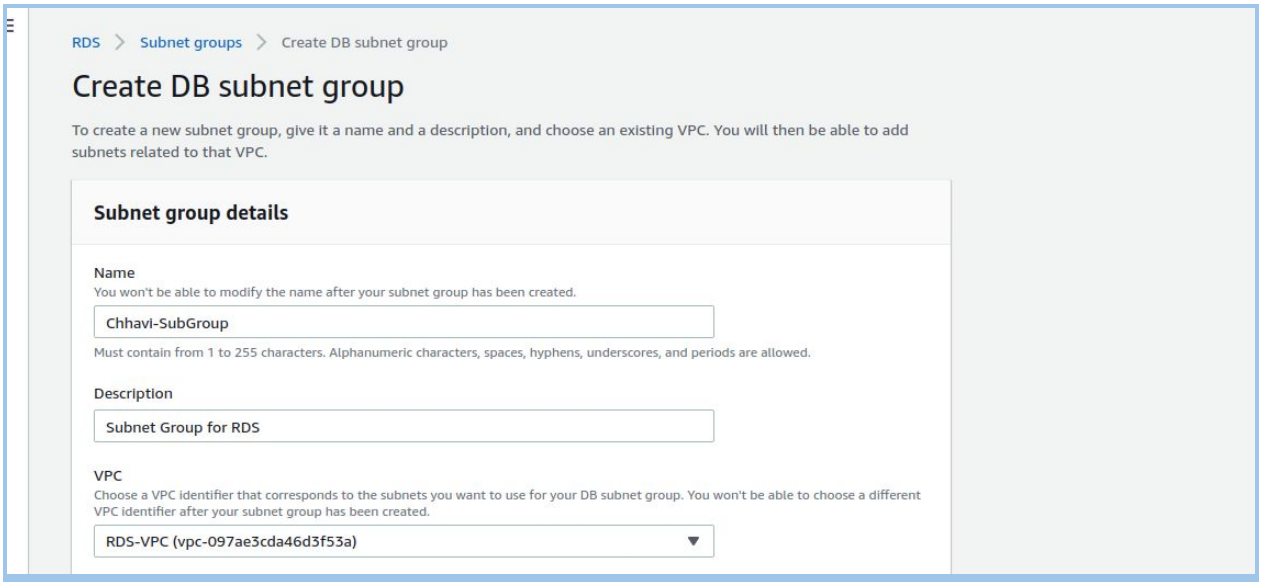
```
{
    "Version": "2012-10-17",
    "Id": "PolicyForPublicWebsiteContent",
    "Statement": [
        {
            "Sid": "Presigned URL ",
            "Effect": "Deny",
            "Principal": "*",
            "Action": [
              s3:Get*"
             ],
            "Resource": "arn:aws:s3:::chhavis3bucket/*",
            "Condition": {
                "StringEquals": {
                    "s3:authtype": "REST-QUERY-STRING"
                }
            }
        }
    ]
}
```

4. Create RDS subnet and launch RDS instance.What is parameter group and option group?

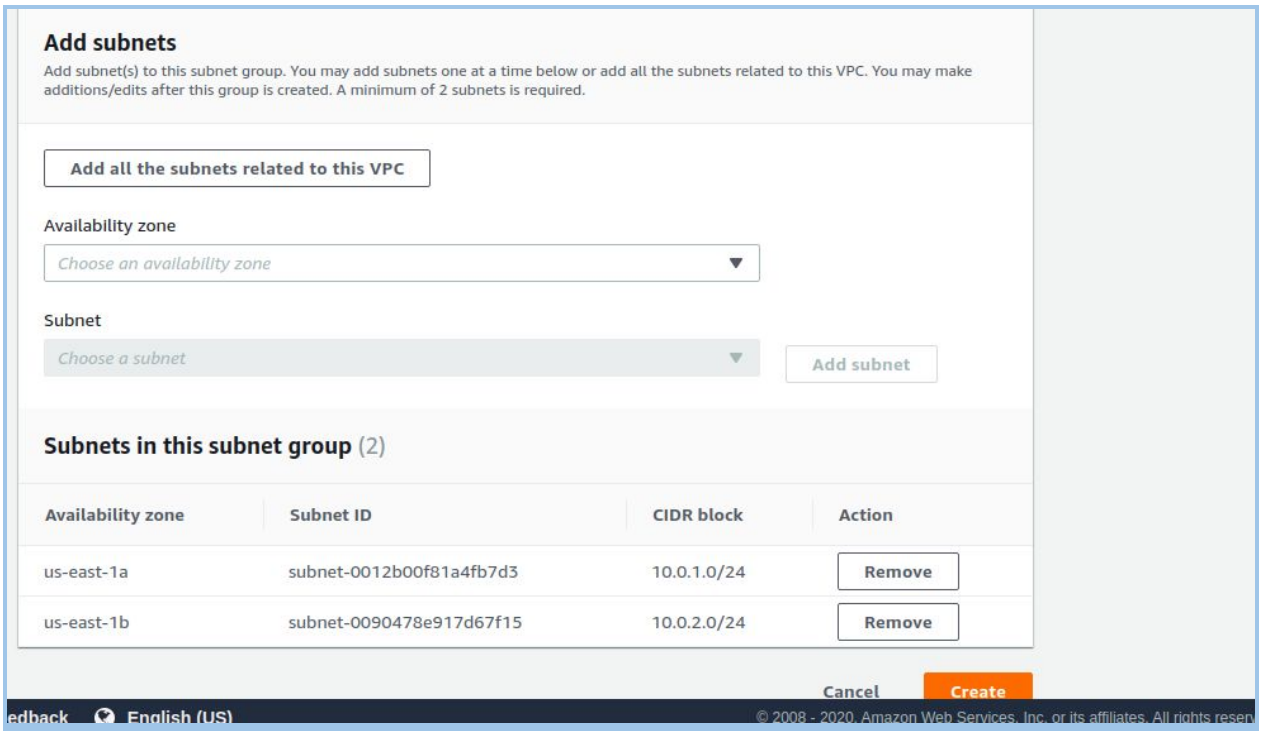
Ans.

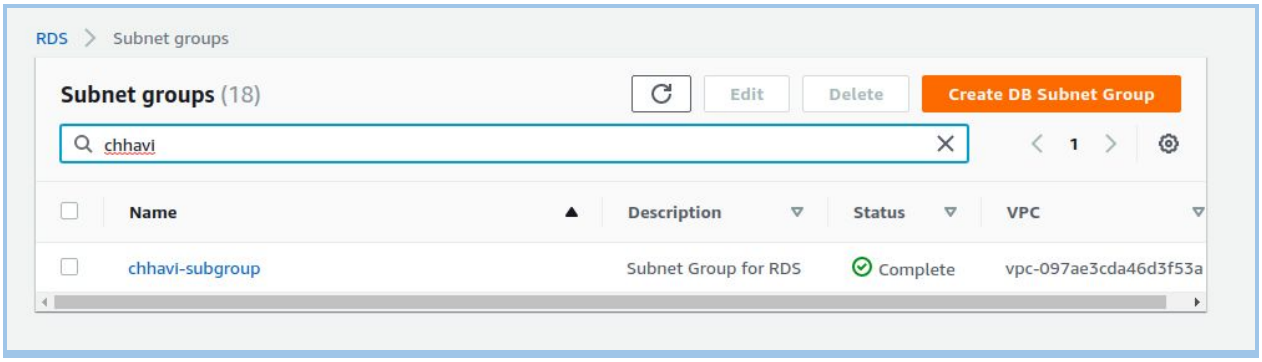
Go to Amazon RDS, build a db-subnet group





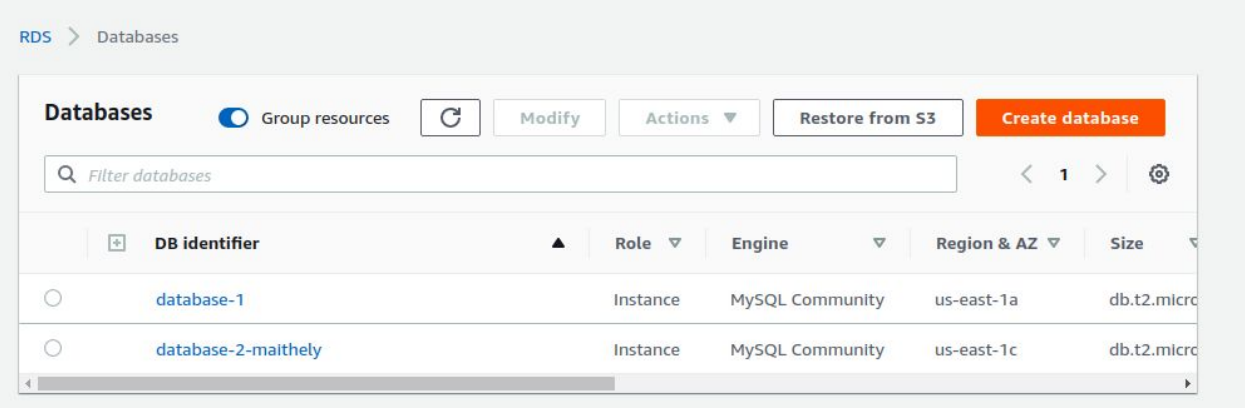
In the Add subnets section, choose Add all the subnets related to this VPC.





Create a VPC Security Group: Before you create your DB instance, you must create a VPC security group to associate with your DB instance. Choose the security group you created and edit inbound rules.Set the following values for your new inbound rule to allow MySQL traffic on port 3306 from your EC2 instance. If you do this, you can connect from your web server to your DB instance to store and retrieve data from your web application to your database.

Create a DB Instance in the VPC
Databases > Choose Create database > In Choose a database creation method, choose Standard Create
*Use the VPC name, the DB subnet group, and the VPC security group you created in the previous steps.
*If you want your DB instance in the VPC to be publicly accessible, you must enable the VPC attributes DNS hostnames and DNS resolution.



Create database

Choose a database creation method Info

- (•) Standard Create
  You set all of the configuration options, including ones for availability, security, backups, and maintenance.
- ( ) Easy Create
  Use recommended best-practice configurations. Some configuration options can be changed after the database is created.

Engine options

Engine type Info

- ( ) Amazon Aurora
- (•) MySQL
- ( ) MariaDB
- ( ) PostgreSQL
- ( ) Oracle
- ( ) Microsoft SQL Server

Edition

(•) MySQL Community

Version Info

MySQL 5.7.22

Known Issues/Limitations
Review the Known Issues/Limitations to learn about potential compatibility issues with specific database versions.

Templates

Choose a sample template to meet your use case.

- ( ) Production
  Use defaults for high availability and fast, consistent performance.
- ( ) Dev/Test
  This instance is intended for development use outside of a production environment.
- (•) Free tier
  Use RDS Free Tier to develop new applications, test existing applications, or gain hands-on experience with Amazon RDS. Info

Settings

DB instance identifier Info

Type a name for your DB instance. The name must be unique cross all DB instances owned by your AWS account in the current AWS Region.

database-chhavi

The DB instance identifier is case-insensitive, but is stored as all lowercase (as in "mydbinstance"). Constraints: 1 to 60 alphanumeric characters or hyphens (1 to 15 for SQL Server). First character must be a letter. Can't contain two consecutive hyphens. Can't end with a hyphen.

▼ **Credentials Settings**

Master username Info

Type a login ID for the master user of your DB instance.

chhavi

1 to 16 alphanumeric characters. First character must be a letter

☐ Auto generate a password

Amazon RDS can generate a password for you, or you can specify your own password

Master password Info

••••••••

Constraints: At least 8 printable ASCII characters. Can't contain any of the following: / (slash), "(double quote) and @ (at sign).

Confirm password Info

DB instance size

DB instance class Info

Choose a DB instance class that meets your processing power and memory requirements. The DB instance class options below are limited to those supported by the engine you selected above.

○ Standard classes (includes m classes)

○ Memory Optimized classes (includes r and x classes)

◉ Burstable classes (includes t classes)

db.t2.micro
1 vCPUs 1 GiB RAM Not EBS Optimized ▼

◯ Include previous generation classes

Storage

Storage type Info

General Purpose (SSD) ▼

Allocated storage

20 GiB

(Minimum: 20 GiB, Maximum: 16384 GiB) Higher allocated storage **may improve** IOPS performance.

20 GiB

(Minimum: 20 GiB, Maximum: 16384 GiB) Higher allocated storage **may improve** IOPS performance.

Storage autoscaling Info

Provides dynamic scaling support for your database's storage based on your application's needs.

☑ Enable storage autoscaling

Enabling this feature will allow the storage to increase once the specified threshold is exceeded.

Maximum storage threshold Info

Charges will apply when your database autoscales to the specified threshold

1000 GiB

Minimum: 21 GiB, Maximum: 16384 GiB

Availability & durability

Multi-AZ deployment Info

○ Create a standby instance (recommended for production usage)

Creates a standby in a different Availability Zone (AZ) to provide data redundancy, eliminate I/O freezes, and minimize latency spikes during system backups.

◉ Do not create a standby instance

Connectivity

Virtual Private Cloud (VPC) Info

VPC that defines the virtual networking environment for this DB instance.

RDS-VPC (vpc-097ae3cda46d3f53a)

Only VPCs with a corresponding DB subnet group are listed.

ⓘ After a database is created, you can't change the VPC selection.

▼ **Additional connectivity configuration**

Subnet group Info

DB subnet group that defines which subnets and IP ranges the DB instance can use in the VPC you selected.

chhavi-subgroup

Publicly accessible Info

○ Yes

Amazon EC2 instances and devices outside the VPC can connect to your database. Choose one or more VPC security groups that specify which EC2 instances and devices inside the VPC can connect to the database.

◉ No

RDS will not assign a public IP address to the database. Only Amazon EC2 instances and

VPC security group

Choose one or more RDS security groups to allow access to your database. Ensure that the security group rules allow incoming traffic from EC2 instances and devices outside your VPC. (Security groups are required for publicly accessible databases.)

(•) Choose existing
Choose existing VPC security groups

( ) Create new
Create new VPC security group

Existing VPC security groups

Choose VPC security groups ▼

RDS_SG ×

Availability zone Info

No preference ▼

Database port Info

TCP/IP port the database will use for application connections.

3306

Database authentication

Database authentication options Info

(•) Password authentication
Authenticates using database passwords.

( ) Password and IAM database authentication
Authenticates using the database password and user credentials through AWS IAM users and roles.

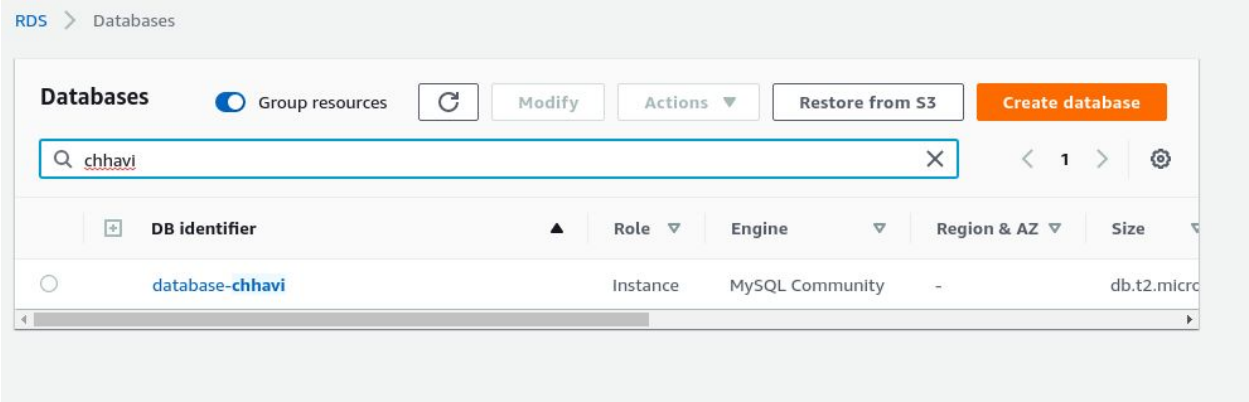
▸ Additional configuration

Database options, backup enabled, backtrack disabled, Enhanced Monitoring disabled, maintenance, CloudWatch Logs, delete protection disabled

Estimated monthly costs

The Amazon RDS Free Tier is available to you for 12 months. Each calendar month, the free tier will allow you to use the Amazon RDS resources listed below for free:

- 750 hrs of Amazon RDS in a Single-AZ db.t2.micro Instance.
- 20 GB of General Purpose Storage (SSD).
- 20 GB for automated backup storage and any user initiated DB Snapshots



Parameter group :For AWS RDS instances, you manage your database engine configuration through the use of parameters in a DB parameter group. DB parameter groups act as a container for engine configuration values that are applied to one or more DB instances.
Option Group:An option group can specify features, called options, that are available for a particular Amazon RDS DB instance. Options can have settings that specify how the option works. When you associate a DB instance with an option group, the specified options and option settings are enabled for that DB instance.
Amazon RDS supports options for the following database engines:
1.MariaDB
2.Microsoft SQL Server
3.MySQL
4.Oracle

5. ACL, Bucket policy, IAM Policy.
Ans.
ACL : Access Control Lists
ACLs are used to define other users' access permissions for your file and folder objects. The Access Permissions that you set using the ACL determine what a user can and cannot do with your file and folder objects. For example, you can set permissions on a file object to let one user read the contents of a file (read access) and let another user make changes to the file (write access). In Amazon S3 you will first add grants to objects and then set the permissions for the grant.
There are 4 types of grants:
1. **An Owner grant** - which defines the permissions the owner of the object has.
2. **Authenticated Users** – which are all Amazon S3 storage users that have an account with S3.
3. **Public** – which means any anonymous user that you have provided the URL to.
4. **Email-ID** – which is an email address of specific S3 customers that have S3 accounts, not

general public emails. The email given must match exactly the email address the S3 user signed up with and can only match one user account.

Bucket Policy

Bucket Policies are similar to IAM policies in that they allow access to resources via a JSON script. However, Bucket policies are applied to Buckets in S3, where as IAM policies are assigned to user/groups/roles and are used to govern access to any AWS resource through the IAM service. When a bucket policy is applied the permissions assigned apply to all objects within the Bucket. The policy will specify which ‘principles’ (users) are allowed to access which resources. The use of Principles within a Bucket policy differs from IAM policies, Principles within IAM policies are defined by who is associated to that policy via the user and group element. As Bucket policies are assigned to Buckets, there is this need of an additional requirement of ‘Principles’.

IAM Policy

A policy is an entity that, when attached to an identity or resource, defines their permissions. A policy that is attached to an identity in IAM is known as an identity-based policy. Identity-based policies can include AWS managed policies, customer managed policies, and inline policies. AWS managed policies are created and managed by AWS. You can use them, but you can’t manage them. An inline policy is one that you create and embed directly to an IAM group, user, or role. Inline policies can’t be reused on other identities or managed outside of the identity where it exists.

6. Mount S3 to an EC2 instance.

Ans.

A S3 bucket can be mounted in a AWS instance as a file system known as S3fs. S3fs is a FUSE file-system that allows you to mount an Amazon S3 bucket as a local file-system. It behaves like a network attached drive, as it does not store anything on the Amazon EC2, but users can access the data on S3 from EC2 instance.

Filesystem in Userspace (FUSE) is a simple interface for userspace programs to export a virtual file-system to the Linux kernel. It also aims to provide a secure method for non privileged users to create and mount their own file-system implementations.

Step 1 : Install the dependencies.

```
chhavi@chhavi:~$ sudo apt-get install automake autotools-dev fuse g++ git libcurl4-gnutls-dev libfuse-dev l
ibssl-dev libxml2-dev make pkg-config
Reading package lists... Done
Building dependency tree
Reading state information... Done
fuse is already the newest version (2.9.7-1ubuntu1).
git is already the newest version (1:2.17.1-1ubuntu0.5).
The following additional packages will be installed:
  autoconf build-essential cpp-7 dpkg-dev fakeroot g++-7 gcc gcc-7 gcc-7-base gcc-8-base
  gir1.2-harfbuzz-0.0 icu-devtools libalgorithm-diff-perl libalgorithm-diff-xs-perl
  libalgorithm-merge-perl libasan4 libatomic1 libc-dev-bin libc6-dev libcc1-0 libcilkrts5 libfakeroot
  libgcc-7-dev libgcc1 libglib2.0-dev libglib2.0-dev-bin libgomp1 libgraphite2-dev libharfbuzz-dev
  libharfbuzz-gobject0 libicu-dev libicu-le-hb-dev libicu-le-hb0 libiculx60 libitm1 liblsan0 libmpx2
  libpcre16-3 libpcre3-dev libpcre32-3 libquadmath0 libselinux1-dev libsepol1-dev libstdc++-7-dev
  libstdc++6 libtsan0 libubsan0 linux-libc-dev m4 manpages-dev python3-distutils python3-lib2to3
  zlib1g-dev
```

Step 2 : Clone S3fs source code from git.

```
chhavi@chhavi:~$ git clone https://github.com/s3fs-fuse/s3fs-fuse.git
Cloning into 's3fs-fuse'...
remote: Enumerating objects: 5879, done.
remote: Total 5879 (delta 0), reused 0 (delta 0), pack-reused 5879
Receiving objects: 100% (5879/5879), 3.46 MiB | 2.59 MiB/s, done.
Resolving deltas: 100% (4079/4079), done.
```

Step 3 : Now change to source code directory, and compile and install the code .

```
chhavi@chhavi:~$ cd s3fs-fuse
chhavi@chhavi:~/s3fs-fuse$ ./autogen.sh
--- Make commit hash file -------
--- Finished commit hash file ---
--- Start autotools -------------
configure.ac:30: installing './compile'
configure.ac:26: installing './config.guess'
configure.ac:26: installing './config.sub'
configure.ac:27: installing './install-sh'
configure.ac:27: installing './missing'
src/Makefile.am: installing './depcomp'
parallel-tests: installing './test-driver'
--- Finished autotools ----------
chhavi@chhavi:~/s3fs-fuse$ ./configure --prefix=/usr --with-openssl
checking build system type... x86_64-pc-linux-gnu
checking host system type... x86_64-pc-linux-gnu
checking target system type... x86_64-pc-linux-gnu
checking for a BSD-compatible install... /usr/bin/install -c
checking whether build environment is sane... yes
checking for a thread-safe mkdir -p... /bin/mkdir -p
checking for gawk... gawk
checking whether make sets $(MAKE)... yes
```

```
config.status: executing depfiles commands
chhavi@chhavi:~/s3fs-fuse$ make
make  all-recursive
make[1]: Entering directory '/home/chhavi/s3fs-fuse'
Making all in src
make[2]: Entering directory '/home/chhavi/s3fs-fuse/src'
g++ -DHAVE_CONFIG_H -I. -I..  -D_FILE_OFFSET_BITS=64 -I/usr/include/fuse -I/usr/include/x86_64-linux-gnu -I
/usr/include/libxml2    -g -O2 -Wall -D_FILE_OFFSET_BITS=64 -D_FORTIFY_SOURCE=2 -MT s3fs.o -MD -MP -MF .dep
s/s3fs.Tpo -c -o s3fs.o s3fs.cpp
mv -f .deps/s3fs.Tpo .deps/s3fs.Po
g++ -DHAVE_CONFIG_H -I. -I..  -D_FILE_OFFSET_BITS=64 -I/usr/include/fuse -I/usr/include/x86_64-linux-gnu -I
/usr/include/libxml2    -g -O2 -Wall -D_FILE_OFFSET_BITS=64 -D_FORTIFY_SOURCE=2 -MT curl.o -MD -MP -MF .dep
s/curl.Tpo -c -o curl.o curl.cpp
mv -f .deps/curl.Tpo .deps/curl.Po
g++ -DHAVE_CONFIG_H -I. -I..  -D_FILE_OFFSET_BITS=64 -I/usr/include/fuse -I/usr/include/x86_64-linux-gnu -I
/usr/include/libxml2    -g -O2 -Wall -D_FILE_OFFSET_BITS=64 -D_FORTIFY_SOURCE=2 -MT cache.o -MD -MP -MF .de
```

```
chhavi@chhavi:~/s3fs-fuse$ sudo make install
Making install in src
make[1]: Entering directory '/home/chhavi/s3fs-fuse/src'
make[2]: Entering directory '/home/chhavi/s3fs-fuse/src'
 /bin/mkdir -p '/usr/bin'
  /usr/bin/install -c s3fs '/usr/bin'
make[2]: Nothing to be done for 'install-data-am'.
make[2]: Leaving directory '/home/chhavi/s3fs-fuse/src'
make[1]: Leaving directory '/home/chhavi/s3fs-fuse/src'
Making install in test
make[1]: Entering directory '/home/chhavi/s3fs-fuse/test'
make[2]: Entering directory '/home/chhavi/s3fs-fuse/test'
make[2]: Nothing to be done for 'install-exec-am'.
```

Step 4 : Check where s3fs command is placed in O.S.

```
chhavi@chhavi:~/s3fs-fuse$ which s3fs
/usr/bin/s3fs
chhavi@chhavi:~/s3fs-fuse$
```

Step 5 : Get the access key and secret key from your aws account.

Step 6 : Create a new file in /etc with the name passwd-s3fs and Paste the access key and secret key .

```
chhavi@chhavi:~/s3fs-fuse$ sudo touch /etc/passwd-s3fs
chhavi@chhavi:~/s3fs-fuse$ vim /etc/passwd-s3fs
```

```
chhavi@chhavi: ~/s3fs-fuse
File  Edit  View  Search  Terminal  Help
#AccessKeyID:SecretkeyID
```

Step 7 : Change the permission of file.

```
chhavi@chhavi:~/s3fs-fuse$ sudo chmod 640 /etc/passwd-s3fs
```

Step 8 :Now create a directory or provide the path of an existing directory and mount S3bucket in it.

```
chhavi@chhavi:~/s3fs-fuse$ sudo mkdir /mys3bucket
chhavi@chhavi:~/s3fs-fuse$
```

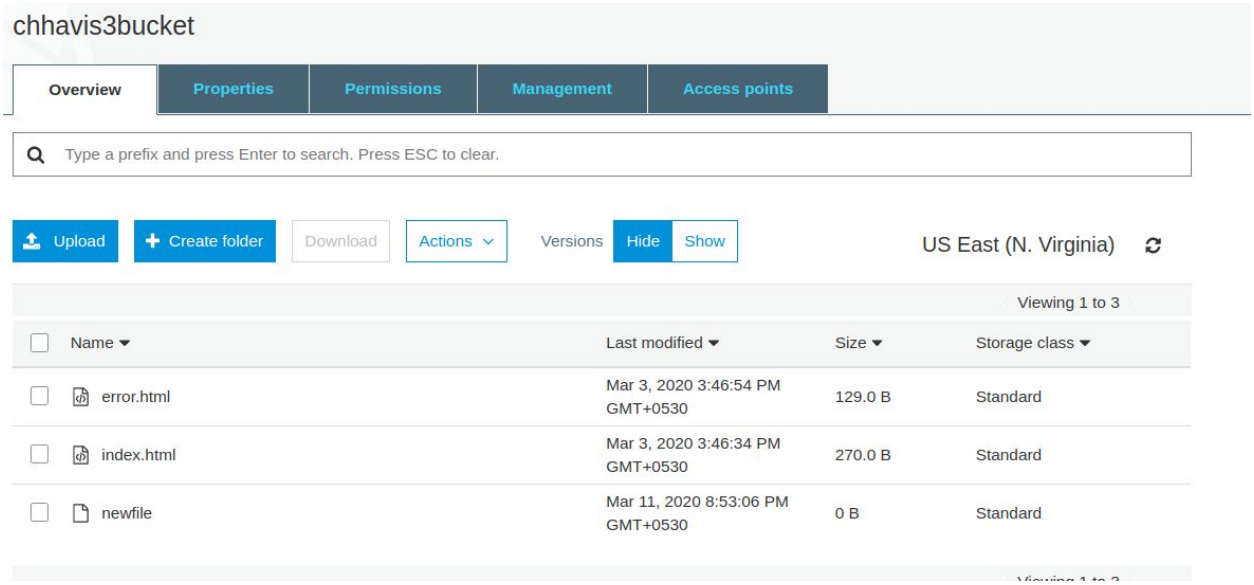
```
chhavi@chhavi:~/s3fs-fuse$ sudo s3fs chhavis3bucket -o use_cache=/tmp -o allow_other -o uid=1001 -o mp_umas
k=002 -o multireq_max=5 /mys3bucket
chhavi@chhavi:~/s3fs-fuse$
```

Step 9 : Check the mounted s3 bucket.

```
chhavi@chhavi:~/s3fs-fuse$ df -Th|grep mys3bucket
s3fs           fuse.s3fs  256T     0  256T   0% /mys3bucket
chhavi@chhavi:~/s3fs-fuse$
```

Step 10 :Now we can test this by creating a file locally. This file should also be reflected in your bucket in s3.

```
chhavi@chhavi:/mys3bucket$ ls
error.html  index.html
chhavi@chhavi:/mys3bucket$ sudo touch newfile
chhavi@chhavi:/mys3bucket$ ls
error.html  index.html  newfile
chhavi@chhavi:/mys3bucket$
```



7. Change content type using s3.

Ans.

Before Changing.

```
chhavi@chhavi:~$ sudo aws s3api get-object --bucket chhavis3bucket --key index.html test.txt
{
    "AcceptRanges": "bytes",
    "LastModified": "2020-03-03T10:16:34+00:00",
    "ContentLength": 270,
    "ETag": "\"1d3b9c8be0b798f2a6539ff0345d774d\"",
    "VersionId": "null",
    "ContentType": "text/html",
    "Metadata": {}
}
chhavi@chhavi:~$
```

Changing the content type to text/plain

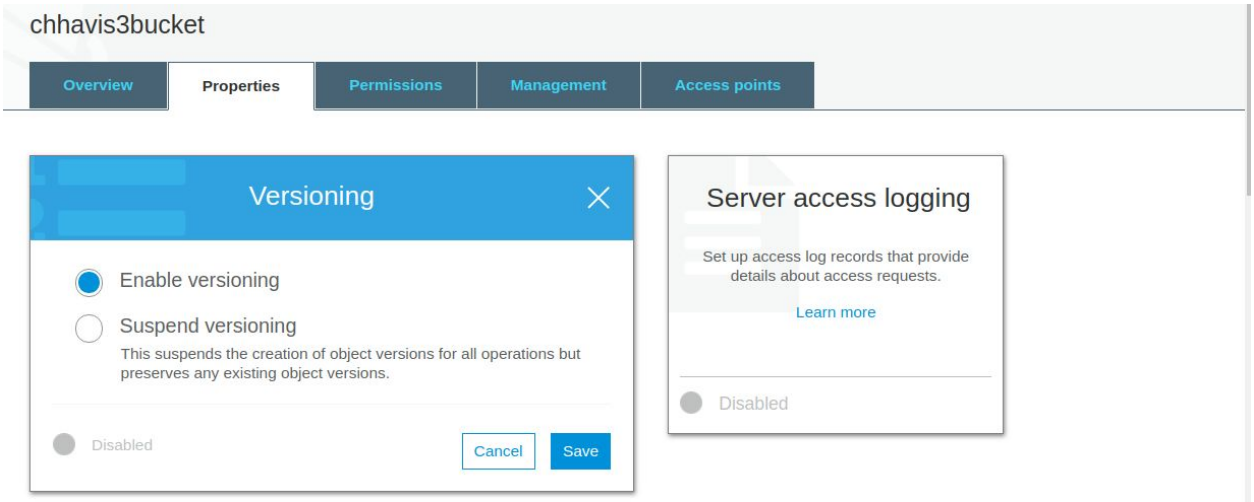
```
chhavi@chhavi:~$ aws s3 cp  s3://chhavis3bucket/  s3://chhavis3bucket/ --exclude '*' --include '*.html'  --no-guess-mime-type  --
-content-type="text/plain" --metadata-directive="REPLACE"  --recursive
copy: s3://chhavis3bucket/error.html to s3://chhavis3bucket/error.html
copy: s3://chhavis3bucket/index.html to s3://chhavis3bucket/index.html
chhavi@chhavi:~$
```

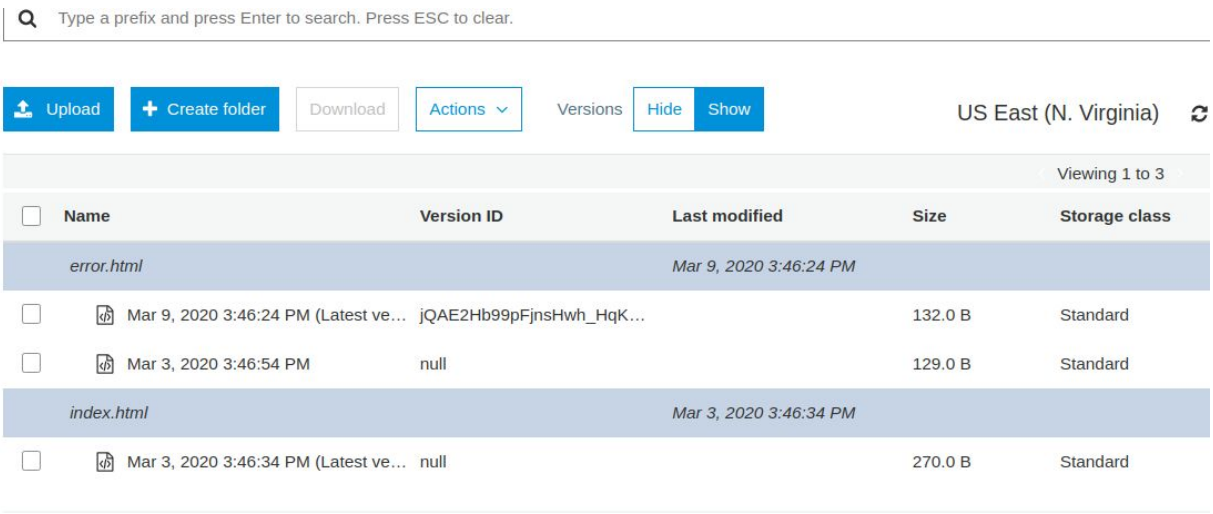
After Changing the content type.

```
chhavi@chhavi:~$ sudo aws s3api get-object --bucket chhavis3bucket --key index.html testnew.txt
{
    "AcceptRanges": "bytes",
    "LastModified": "2020-03-11T15:36:00+00:00",
    "ContentLength": 270,
    "ETag": "\"1d3b9c8be0b798f2a6539ff0345d774d\"",
    "VersionId": "FaRw_qDxYnPw0QAZ.vuSBJYYOBhIeep_",
    "ContentType": "text/plain",
    "Metadata": {}
}
chhavi@chhavi:~$
```

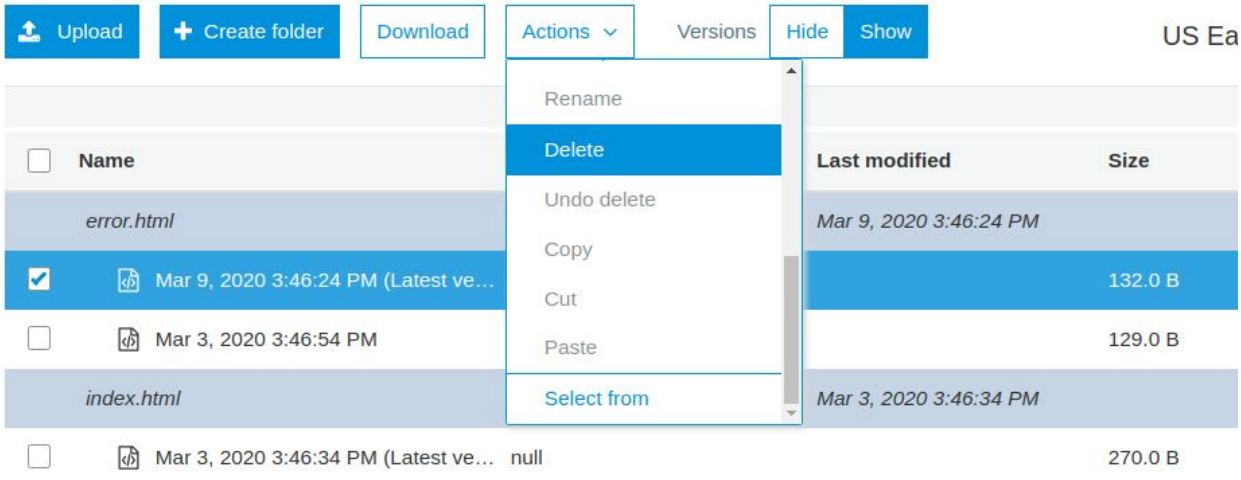
8. Retrieve previous version of S3(enable versioning).

Ans.

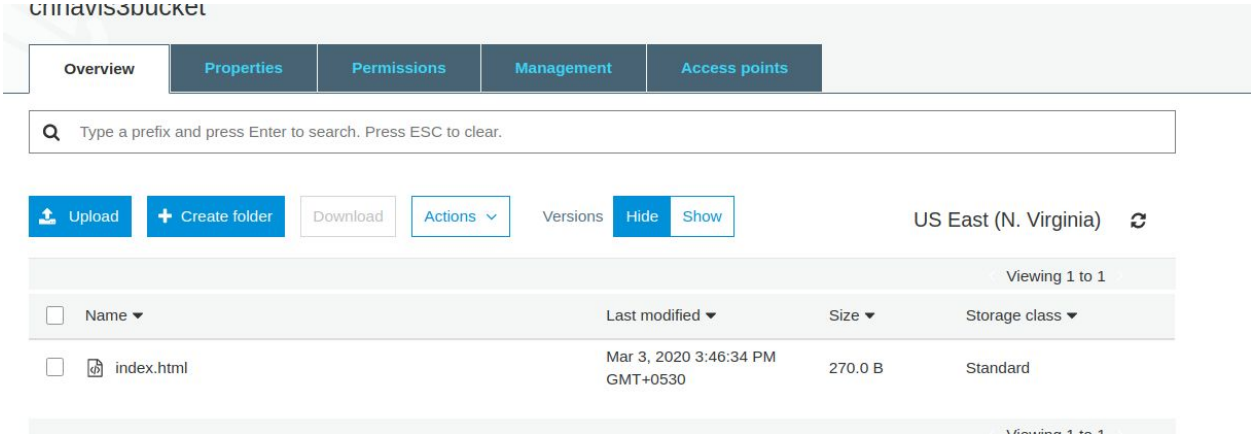


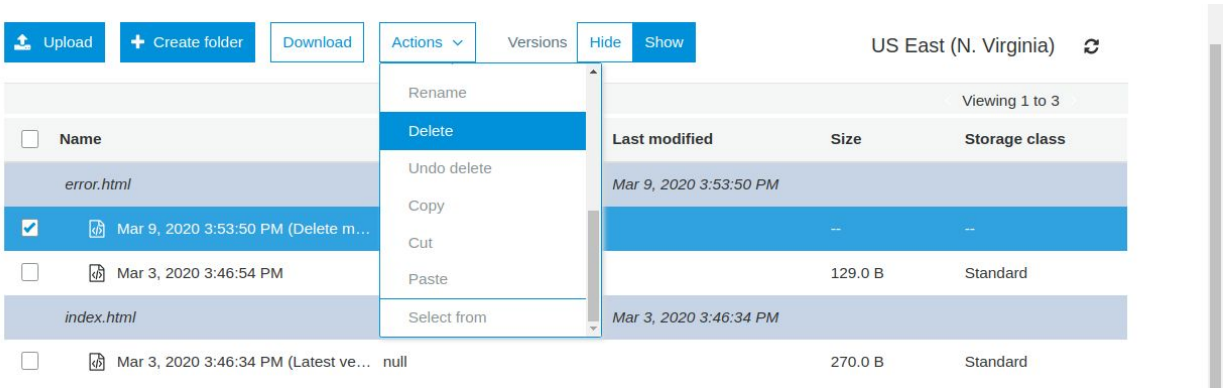


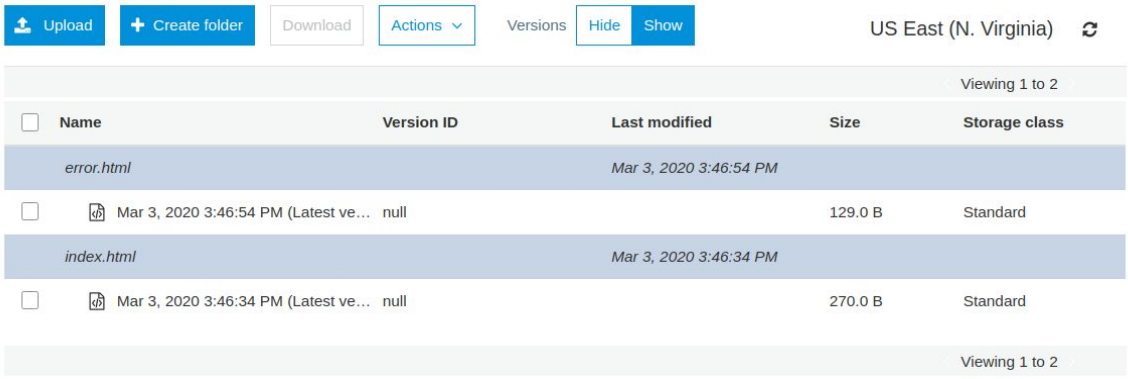
Delete the new version to rollback.(You need to delete the delete node as well.)

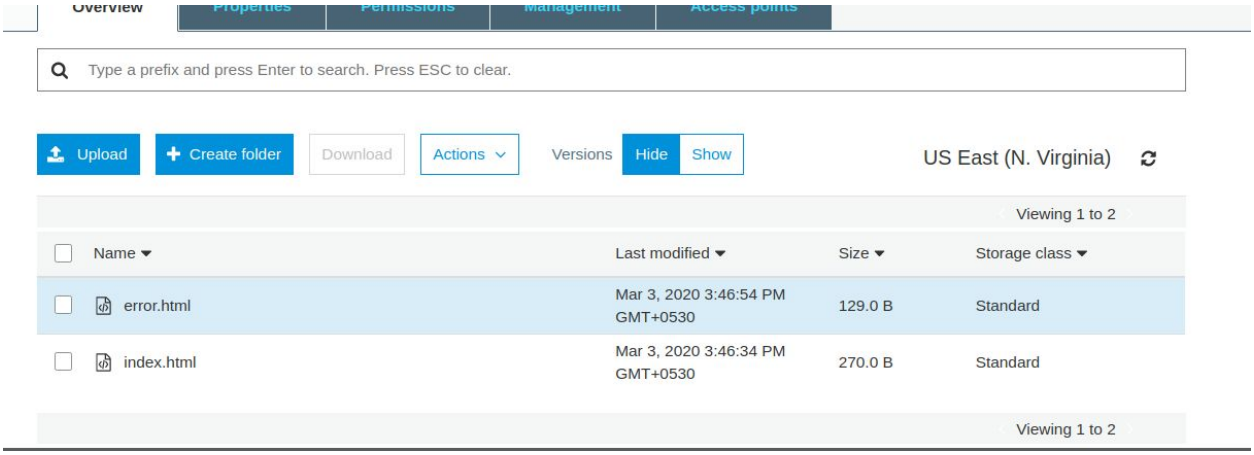


Now if you delete the original file. Show versions. You get the deleted nodes. Delete the new version. You will get back the old version.





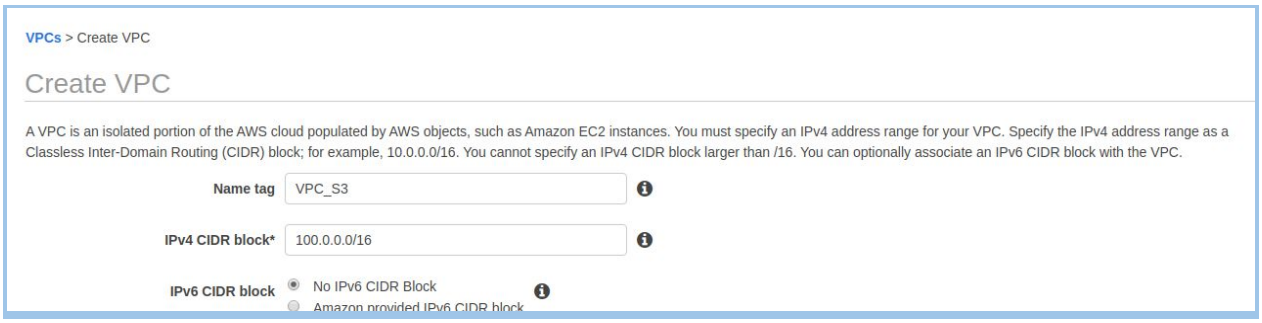




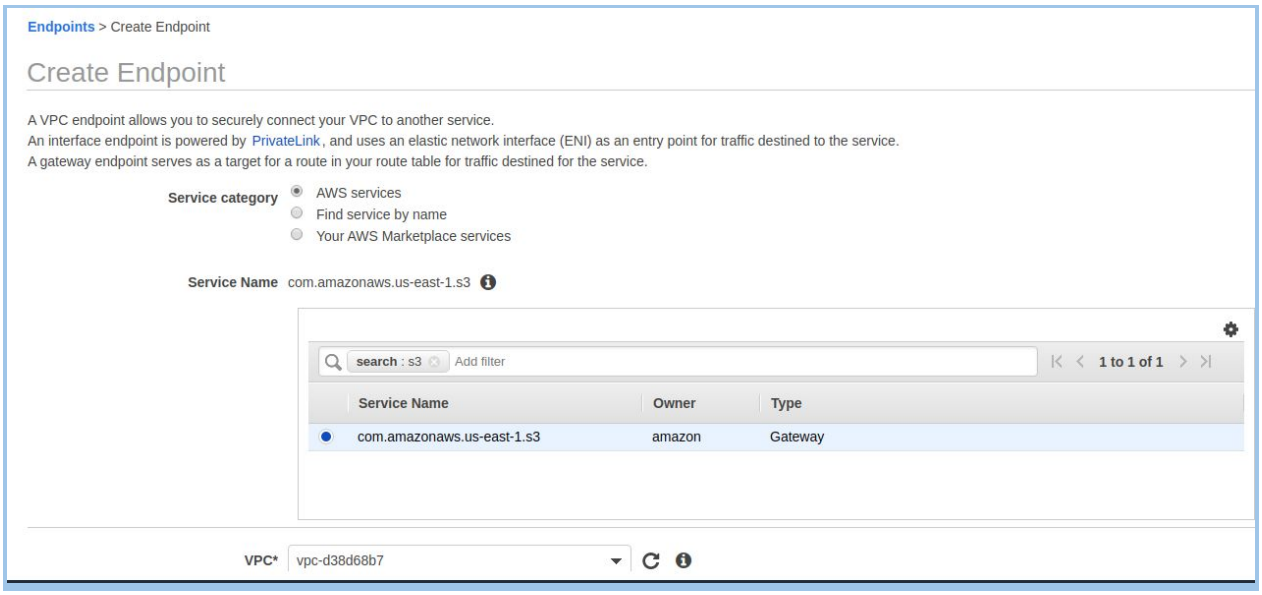
9. S3 VPC endpoint.

Ans.

Create a VPC with subnets.

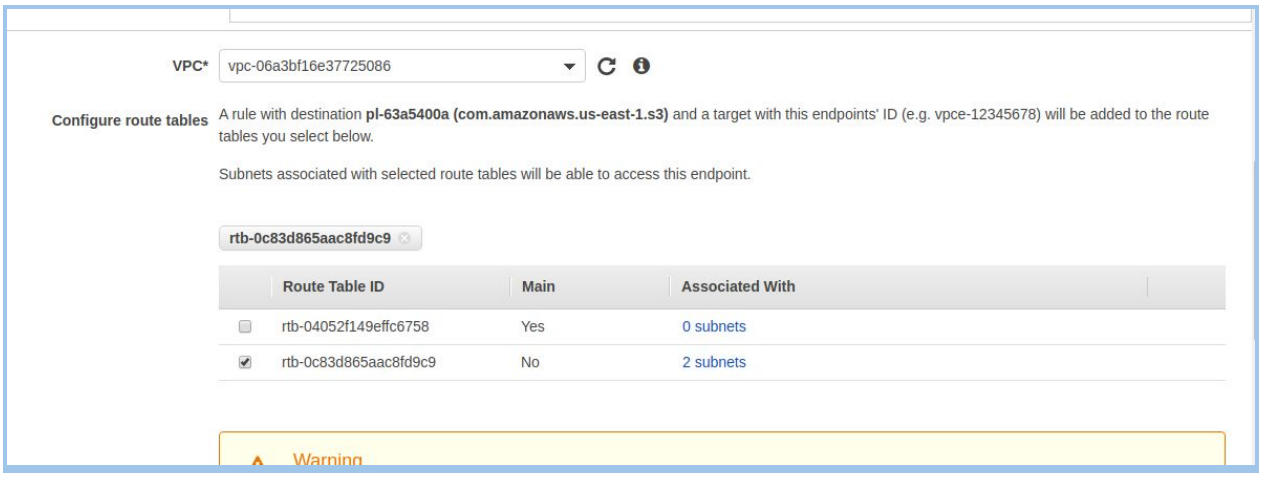


From the navigation pane, choose Endpoints.-> Create Endpoints.For Service category, verify that AWS services is selected and for the Service Name, select the service name that includes "s3". Service name in the US East (N. Virginia) Region is com.amazonaws.us-east-1.s3.

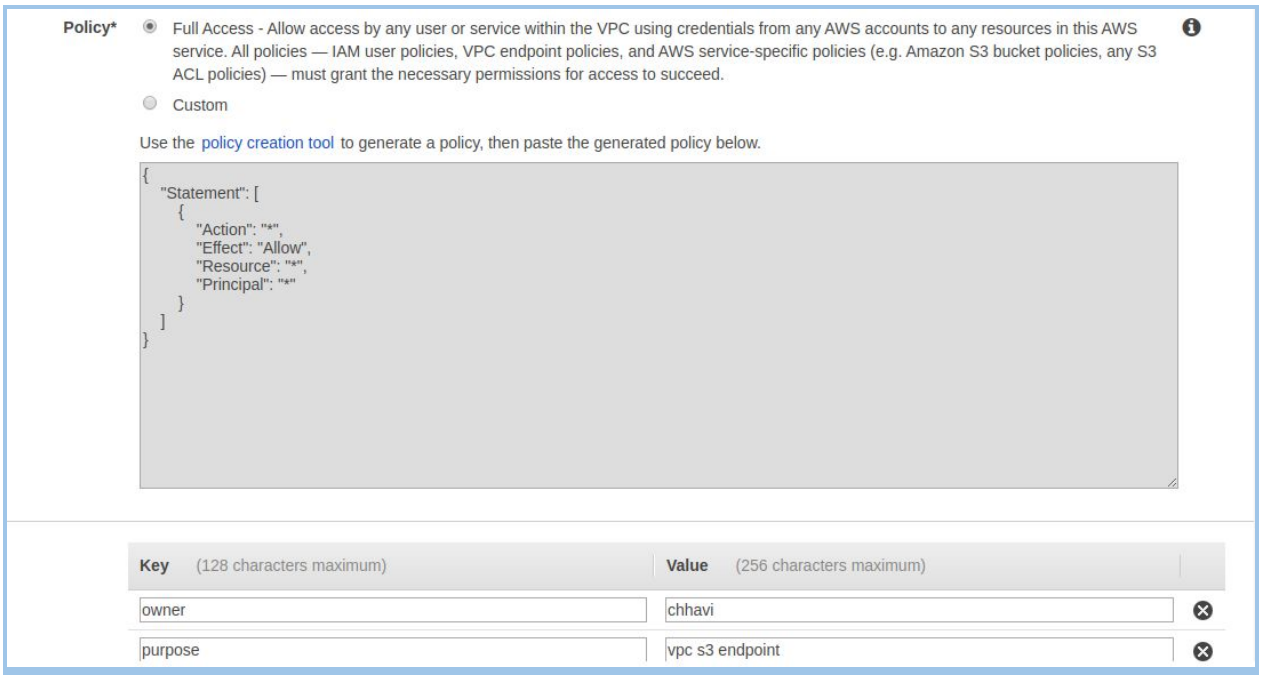


select the VPC that you want to use.

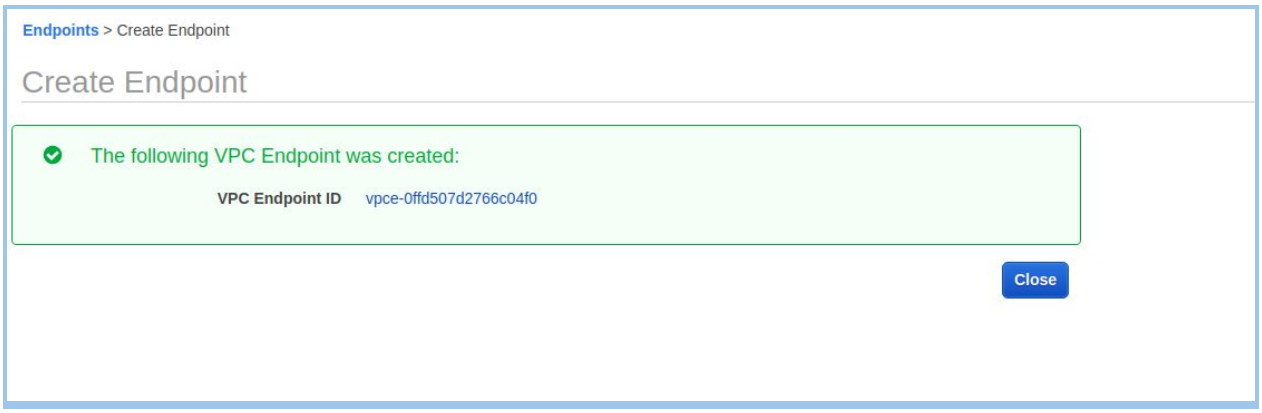
For Configure route tables, select the route tables based on the associated subnets that you want to be able to access the endpoint.



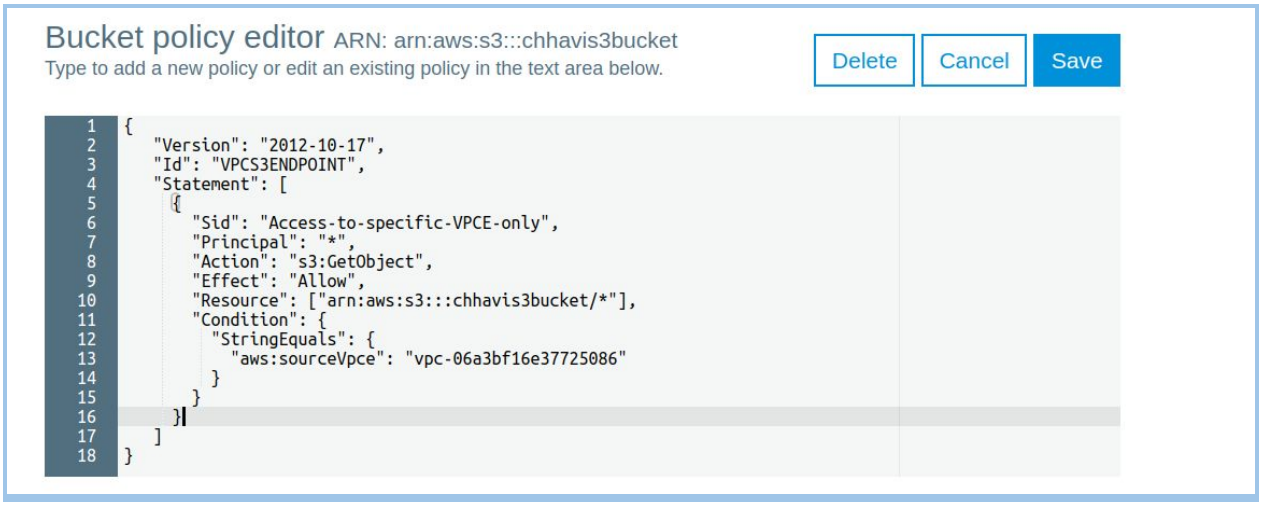
For Policy, verify that Full Access is selected.



Take note of the VPC Endpoint ID. You need this ID for a later step.



Add a bucket policy that allows access from the VPC endpoint



10. CORS, Enable CORS for 2 specific websites.

Ans.

Cross-Origin Resource Sharing (CORS) is a mechanism that uses additional HTTP headers to tell browsers to give a web application running at one origin, access to selected resources from a different origin. A web application executes a cross-origin HTTP request when it requests a resource that has a different origin (domain, protocol, or port) from its own.