



Access S3 from a VPC



Nikhil Bhan

```
[ec2-user@ip-10-0-4-244 ~]$ sudo touch /tmp/test.txt
[ec2-user@ip-10-0-4-244 ~]$ aws s3 cp /tmp/test.txt s3://nextwork-vpc-project-nikhilbhan
upload: ./tmp/test.txt to s3://nextwork-vpc-project-nikhilbhan/test.txt
[ec2-user@ip-10-0-4-244 ~]$ aws s3 ls s3://nextwork-vpc-project-nikhilbhan
2024-11-08 22:13:03      7233 hogwartslegacy.jpg
2024-11-08 22:13:04      11292 legendofzeldabotw.jpg
2024-11-08 23:20:14          0 test.txt
[ec2-user@ip-10-0-4-244 ~]$ 
```



Introducing Today's Project!

What is Amazon VPC?

Amazon VPC (Virtual Private Cloud) allows users to create a private and isolated network in their AWS account. They can manage and organize resources as well as configure permissions and access to those resources.

How I used Amazon VPC in this project

In this project I learned how to configure my EC2 instance with credentials to connect it to my AWS environment. I was able to use my EC2 instance to create a file and upload it to my S3 Bucket and verify this in the AWS CLI terminal.

One thing I didn't expect in this project was...

I wasn't expecting how easy it was to upload files from the AWS CLI from the instance to my S3 Bucket. Now that I know this I can learn to automate tasks and manage my AWS resources efficiently.

This project took me...

This project took me 1 hour and 30 minutes to complete. I used another 20 minutes to write my documentation.

In the first part of my project...

Step 1 - Architecture set up

In this step I'm going to create a new VPC and launch an EC2 instance into that VPC.

Step 2 - Connect to my EC2 instance

In this step I'm going to connect directly to my EC2 instance via EC2 Instance Connect. I made sure my instance is in a public subnet and it also has a public IP address so that I can access it through the Internet.

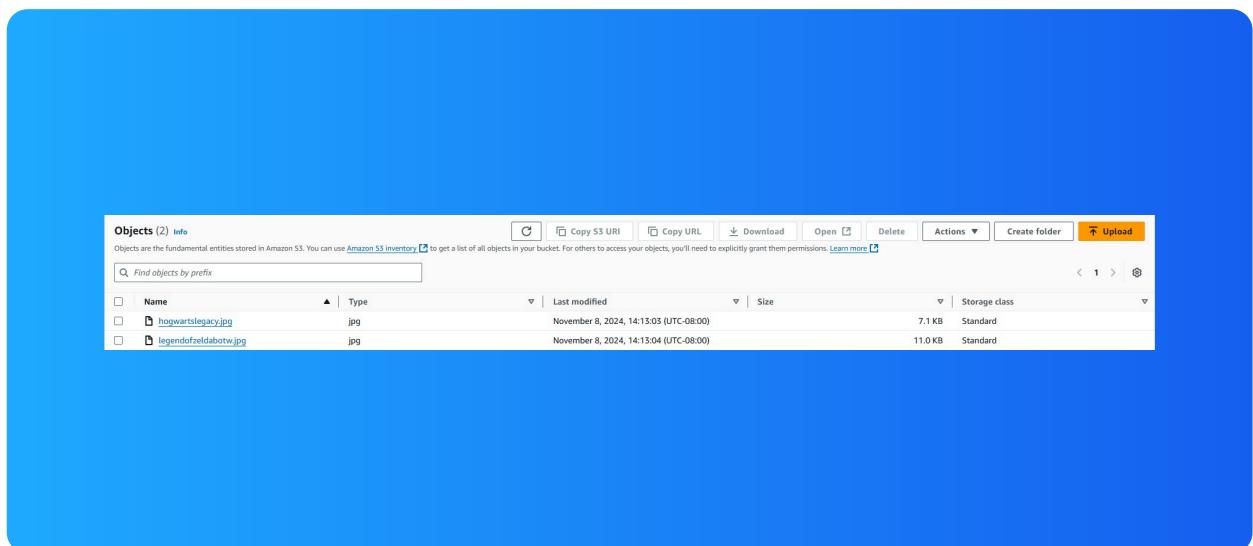
Step 3 - Set up access keys

In this step I'm going to give the EC2 instance access to my AWS environment.

Architecture set up

I started my project by launching the VPC Dashboard and created a new VPC with the default CIDR block, one Availability Zone and one public subnet. After this I went to the EC2 Dashboard and launched a new instance by clicking on Launch Instance.

I also set up 2 files by uploading them to my S3 bucket.



Running CLI commands

AWS CLI is a special type of software that a user can install and run to control AWS resources from their local computer's command line application. I have access to AWS CLI because my EC2 instance already came with it installed.

The first command I ran was aws s3 ls. This command is used to list the S3 buckets that are in my AWS account.

The second command I ran was aws configure. This command is used to enter credentials on an EC2 instance; this gives the instance permissions to access and manage AWS resources securely. These credentials need to be manually set up in AWS first.

```
'`#`          Amazon Linux 2023
~~\_\#\#\#\` 
~~ \#\#\#\` 
~~ \#\#\` 
~~ \#/` __> https://aws.amazon.com/linux/amazon-linux-2023
~~ V~`'-->
~~` /` 
~~` /` /` 
~~` /` /` /` 
[ec2-user@ip-10-0-4-244 ~]$ aws s3 ls

Unable to locate credentials. You can configure credentials by running "aws configure".
[ec2-user@ip-10-0-4-244 ~]$ aws configure
AWS Access Key ID [None]: []
```

Access keys

Credentials

To set up my EC2 instance to interact with my AWS environment, I configured the credentials in the instance terminal. After that I set the Region to ca-central-1, which is Canada and it's where I've stored my S3 Bucket.

Access keys are credentials used to provide applications access to AWS resources. These access keys are like the username when granting an application access to AWS; the password is the Secret Access Key, which is manually set up in the AWS console.

Secret Access Keys are like passwords and they get paired with their Access Key ID; both of these credentials are required to allow applications and servers access to AWS resources.

Best practice

Although I'm using access keys in this project, a best practice alternative is to create a role in AWS Identity Access and Management (IAM). I would assign the appropriate permissions to the role and then attach it to my EC2 instance.

In the second part of my project...

Step 4 - Set up an S3 bucket

In this step I'm going to create a bucket in Amazon S3.

Step 5 - Connecting to my S3 bucket

In this step I'm going to my EC2 instance and try to interact with the S3 Bucket I had created.

Connecting to my S3 bucket

The first command I ran was aws s3 ls. This command is used to list the S3 buckets that are in my AWS account.

When I ran the command aws s3 ls again, the terminal responded with a list of S3 buckets in the ca-central-1 Region. This indicated that my EC2 instance was able to successfully connect to S3.

```
[ec2-user@ip-10-0-4-244 ~]$ aws s3 ls
2024-10-07 20:16:58 cf-templates-1p97x24v7h9vn-ap-south-1
2024-10-03 21:07:33 nextwork-build-artifacts-nikhil
2024-11-08 22:03:17 nextwork-vpc-project-nikhilbhan
[ec2-user@ip-10-0-4-244 ~]$ █
```



Connecting to my S3 bucket

Another CLI command I ran was aws s3 ls s3://nextwork-vpc-project-nikhilbhan, which returned a list of the objects that were stored in the S3 bucket I created.

```
[ec2-user@ip-10-0-4-244 ~]$ aws s3 ls s3://nextwork-vpc-project-nikhilbhan
2024-11-08 22:13:03      7233 hogwartslegacy.jpg
2024-11-08 22:13:04     11292 legendofzeldabotw.jpg
[ec2-user@ip-10-0-4-244 ~]$ █
```

Uploading objects to S3

To upload a new file to my bucket, I first ran the command sudo touch /tmp/test.txt. This command creates a new blank file .txt in the EC2 instance.

The second command I ran was aws s3 cp /tmp/test.txt s3://nextwork-vpc-project-nikhilbhan. This command will copy the test.txt file on my EC2 instance and it will upload it to my S3 bucket.

The third command I ran was aws s3 ls s3://nextwork-vpc-project-nikhilbhan, which validated that the test.txt file was successfully uploaded to the S3 bucket.

```
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2024-11-08 23:20:14          0 test.txt
[ec2-user@ip-10-0-4-244 ~]$ []
```



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