



Access S3 from a VPC



Saish Nar

```
[ec2-user@ip-10-0-11-136 ~]$ aws s3 ls s3://nextwork-vpc-project-saish
2024-10-04 05:38:10    2431554 NextWork - Denzel is awesome.png
2024-10-04 05:38:09    2399812 NextWork - Lelo is awesome.png
[ec2-user@ip-10-0-11-136 ~]$ sudo touch /tmp/test.txt
[ec2-user@ip-10-0-11-136 ~]$ aws s3 cp /tmp/test.txt s3://nextwork-vpc-project-saish
upload: ../../tmp/test.txt to s3://nextwork-vpc-project-saish/test.txt
[ec2-user@ip-10-0-11-136 ~]$ aws s3 ls s3://nextwork-vpc-project-saish
2024-10-04 05:38:10    2431554 NextWork - Denzel is awesome.png
2024-10-04 05:38:09    2399812 NextWork - Lelo is awesome.png
2024-10-04 06:19:28      0 test.txt
```



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Introducing Today's Project!

What is Amazon VPC?

Amazon VPC is AWS's foundational network service that allows us to create our own isolated networks within an AWS region and control network traffic and security etc.

How I used Amazon VPC in this project

I launched a VPC with a public subnet and EC2 instance, I also directly accessed/managed an Amazon S3 bucket through the EC2 instance using AWS CLI .

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

I didn't expect that access keys are required for EC2 instances / other applications to get access to my AWS environment.

This project took me...

This project took an one and half hour to complete.



In the first part of my project...

Step 1 - Architecture set up

In this step, I launch a VPC with a public subnet. I also launch an EC2 instance inside that public subnet.

Step 2 - Connect to my EC2 instance

In this step, I directly access an EC2 instance using EC2 instance Connect.

Step 3 - Set up access keys

In this step, I create access keys so that my EC2 instance can have access to my AWS environment, specifically the ability to interact with an S3 bucket.



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Architecture set up

I started my project by launching a VPC with a public subnet, and an EC2 instance inside the public subnet.

I also set up an S3 bucket with two files inside.

The screenshot shows the AWS S3 console interface. The bucket name is 'nextwork-vpc-project-saish'. There are two objects listed:

Name	Type	Last modified	Size	Storage class
NextWork - Denzel is awesome.png	png	October 4, 2024, 11:08:10 (UTC+05:30)	2.3 MB	Standard
NextWork - Lelo is awesome.png	png	October 4, 2024, 11:08:09 (UTC+05:30)	2.3 MB	Standard



Running CLI commands

AWS CLI is a software I can download into a local computer's terminal so that I can have access to my AWS account and different actions without needing to use the AWS management console. I have access to AWS CLI because it's pre-installed in EC2.

The first command I ran was 'aws s3 ls'. This command is used to list all S3 buckets inside the AWS account (that the EC2 instance/application has access to).

The second command I ran was 'aws configure'. This command is used to set up my EC2 instance's credentials in order to access my AWS environment.

```
[ec2-user@ip-10-0-11-136 ~]$ aws s3 ls
Unable to locate credentials. You can configure credentials by running "aws configure".
[ec2-user@ip-10-0-11-136 ~]$ aws configure
```



Access keys

Credentials

To set up my EC2 instance to interact with my AWS environment, I configured an Access Key ID, Secret Access Key, default region and a default output format.

Access keys are credentials that my EC2 instance + other applications/servers needs in order to get access to my AWS environment i.e. interact with my AWS resources/services.

Secret access keys are like passwords for my access keys / credentials. My EC2 instance / other applications would need secret access keys as authentication and "login in" to my AWS environment.

Best practice

Although I'm using access keys in this project, a best practice alternative is to use IAM roles with permissions attached. This is a more secure way to grant access to an EC2 instance because it is much easier to track, attach and detach IAM policies



In the second part of my project...

Step 4 - Set up an S3 bucket

In this step I launch an Amazon S3 bucket with two files inside. This S3 bucket will be accessed by my EC2 instance later in the project, so I can test whether my access key has successfully given AWS access to my EC2 instance.

Step 5 - Connecting to my S3 bucket

In this step, I am using AWS CLI commands to try control/manage my S3 bucket. This means I am interacting with my S3 bucket through my EC2 instance/VPC instead of the AWS Management Console.



Connecting to my S3 bucket

The first command I ran was 'aws s3 ls'. This command is used to list all S3 buckets inside the AWS account (that the EC2 instance/application has access to).

When I ran the command 'aws s3 ls' again, the terminal responded with a list of my S3 buckets. This indicated that my access keys works i.e. my EC2 instance has access to my AWS environment.

```
[ec2-user@ip-10-0-11-136 ~]$ aws s3 ls
2024-10-04 05:36:46 nextwork-vpc-project-saish
[ec2-user@ip-10-0-11-136 ~]$ █
```



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Connecting to my S3 bucket

Another CLI command I ran was 'aws s3 ls s3://nextwork-vpc-project-saish'. which returned a list of the objects inside my S3 bucket.

```
[ec2-user@ip-10-0-11-136 ~]$ aws s3 ls s3://nextwork-vpc-project-saish
2024-10-04 05:38:10    2431554 NextWork - Denzel is awesome.png
2024-10-04 05:38:09    2399812 NextWork - Lelo is awesome.png
```



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 blank file called 'test.txt' in my EC2 instance's local directory.

The second command I ran was. "aws s3 cp /tmp/test.txt s3://nextwork-vpcproject-saish". This command will 'copy' i.e. upload the blank file created into my S3 bucket.

The third command I ran was 'aws s3 ls s3://nextwork-vpc-project-saish' which returned a list of all objects in my S3 bucket - including test.txt. This validated my EC2 instance, through AWS CLI commands, can get access to other AWS services (S3).

```
[ec2-user@ip-10-0-11-136 ~]$ aws s3 ls s3://nextwork-vpc-project-saish
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upload: ../../tmp/test.txt to s3://nextwork-vpc-project-saish/test.txt
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2024-10-04 06:19:28          0 test.txt
```



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