Access S3 from a VPC

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Introducing Today's Project!

What is Amazon VPC?

Amazon VPC is wonderful for building secure and scalable network infrastructure. It is useful for engineers to save time setting up VPC within few clicks by using VPC wizard.

How I used Amazon VPC in this project

In today's project, I used Amazon VPC to create an infrastructure that enables resources/instances interact with each other using AWS credentials service and AWS CLI.

This project took me...

I took this project approximately 30 minutes. It was rewarding to see that I can remotely access and navigate to AWS infrastructures through AWS CLI.

In the first part of my project...

Step 1 - Architecture set up

In this step, I am going to set up the foundations of today's project - a VPC and EC2 instance, from scratch!

Step 2 - Connect to my EC2 instance

In this step, I'm gonna connect to my EC2 instance and try access an AWS service, such as S3.

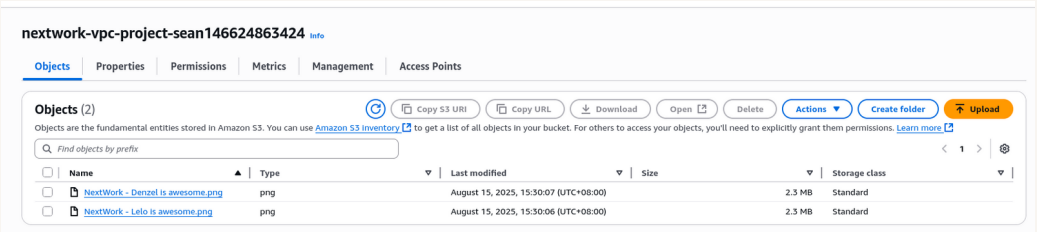
Step 3 - Set up access keys

In this step, my EC2 instance needs credentials to access my AWS services, such as S3 for the project. So I will set up access keys right away.

Architecture set up

I started my project by launching EC2 instance and assigned it to NextWork VPC

I also uploaded objects on my S3 bucket.

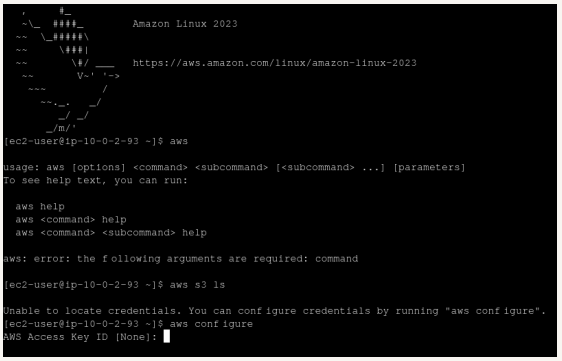


Running CLI commands

AWS CLI is another tool aside from AWS management console to interact with AWS services/resources, and is a go-to tool for many engineers. I have access to AWS CLI because EC2 instances comes with preinstalled packaged already.

The first command I ran was "aws s3 ls". This command is used to view directories/files that are available on the s3 bucket.

The second command I ran was "aws configure". This command is used to configure access keys in order to resolve access denied error upon accessing my AWS services/resources.



Access keys

Credentials

To set up my EC2 instance to interact with my AWS environment, I configured access keys with a command "aws configure"

Access keys are simply credentials that are needed to log in to AWS infrastructure.

The secret access key is like the password that pairs with your access key ID (your username). You need both to access AWS services. Secret is a key word here - anyone who has it can access my AWS account, so I need to keep this away from anyone.

Best practice

Although I'm using access keys in this project, a best practice alternative is to use AWS CloudShell - a browser based CLI or use AWS CLI v2 and then enable authentication through IAM Identity Center.

In the second part of my project...

Step 4 - Set up an S3 bucket

In this step, I am going to create a bucket in Amazon S3. After creating this bucket, I will explore how to access it from my EC2 instance and do things like checking what objects are in the bucket.

Step 5 - Connecting to my S3 bucket

In this step, I will try use my EC2 instance to interact with S3 with my access key.

Connecting to my S3 bucket

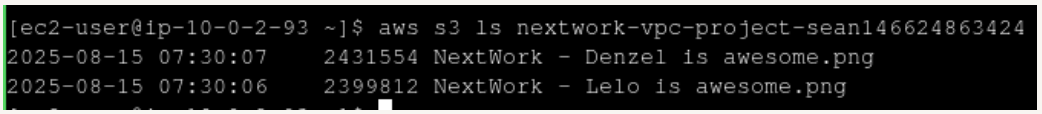
The first command I ran was "aws s3 ls". This command is used to view directories/files that are available on the s3 bucket.

When I ran the command "aws s3 ls" again, the terminal quickly responded with timestamp and a name of the bucket. This indicated successful setup of communication between S3 and EC2 instance.

```
[ec2-user@ip-10-0-2-93 ~]$ aws s3 ls
2025-08-15 07:28:18 nextwork-vpc-project-sean146624863424
```

Connecting to my S3 bucket

Another CLI command I ran was "aws s3 ls nextwork-vpc-project-sean146624863424" which returned all objects living inside the bucket.



Uploading objects to S3

To upload a new file to my bucket, I first ran the command "sudo touch /tmp/test.txt" which creates text file with a filename test that lives in the /tmp directory and created with administrative privileges.

The second command I ran was "aws s3 cp /tmp/test.txt s3://nextwork-vpc-project-sean146624863424" which is a command that will upload my txt file directly to my s3 bucket.

The third command I ran was "aws s3 ls nextwork-vpc-project-sean146624863424" which validated the file was successfully uploaded into S3 bucket.

```
[ec2-user@ip-10-0-2-93 ~]$ aws s3 rm s3://nextwork-vpc-project-sean146624863424/test.txt
delete: s3://nextwork-vpc-project-sean146624863424/test.txt
[ec2-user@ip-10-0-2-93 ~]$ sudo touch /tmp/test.txt
[ec2-user@ip-10-0-2-93 ~]$ aws s3 cp /tmp/test.txt s3://nextwork-vpc-project-sean146624863424
upload: ../../tmp/test.txt to s3://nextwork-vpc-project-sean146624863424/test.txt
[ec2-user@ip-10-0-2-93 ~]$ aws s3 ls nextwork-vpc-project-sean146624863424
2025-08-15 07:30:07    2431554 NextWork - Denzel is awesome.png
2025-08-15 07:30:06    2399812 NextWork - Lelo is awesome.png
2025-08-15 07:41:46          0 test.txt
[ec2-user@ip-10-0-2-93 ~]$
```

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