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Access S3 from a VPC

J

Michael K.

```
ec2-user@ip-10-0-1-96 ~]$ aws s3 ls s3://nextwork-vpc-project-maya
2025-08-21 03:59:30    2431554 NextWork - Denzel is awesome.png
2025-08-21 03:59:30    2399812 NextWork - Lelo is awesome.png
2025-08-21 04:09:05      0 test.txt
```



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Introducing Today's Project!

What is Amazon VPC?

Amazon VPC (Virtual Private Cloud) is a logically isolated virtual network within AWS where I can launch and manage AWS resources (such as EC2 instances, RDS databases, and load balancers) using my own defined IP address range, subnets, route tables, and network gateways.

How I used Amazon VPC in this project

In today's project, I used Amazon VPC to test the connectivity between my VPC and S3.

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

One thing I didn't expect in this project was to discover security vulnerabilities that could occur if not done the safe way.

This project took me...

This project took me 1 hour.



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In the first part of my project...

Step 1 - Architecture set up

In this step, I will Create a VPC from scratch and launch an EC2 instance into my VPC.

Step 2 - Connect to my EC2 instance

In this step, I will connect directly to my EC2 instance.

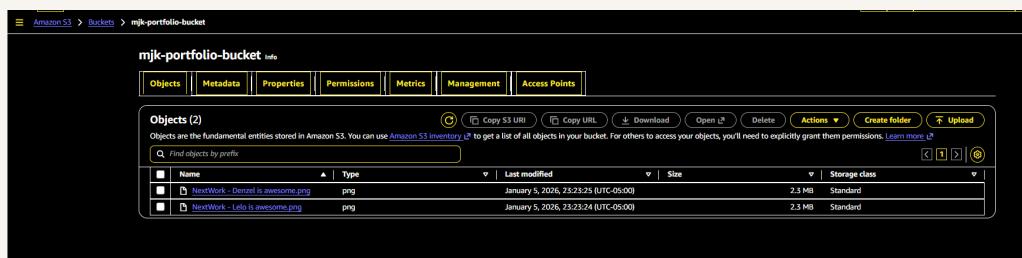
Step 3 - Set up access keys

In this step, I will give my EC2 instance access to my AWS environment.

Architecture set up

I started my project by launching a VPC, its resources (Public subnet etc) and a server (EC2 Instance) in the VPC.

I also set up my S3 bucket with 2 Objects.



Running CLI commands

AWS CLI is a tool to automate tasks and manage AWS resources efficiently using scripts, making it essential for managing my cloud environment in an efficient way.

The first command I ran was <<aws s3 ls>>. This command is used to access S3 and list the number of Buckets in the account.

The second command I ran was <<aws configure>>. This command is used to configure my server for it to talk or have access to other AWS resources/services.



A screenshot of a terminal window on Amazon Linux 2023. The window title is 'aws'. The terminal shows the following output:

```
aws [Alt+S] 
#_ _ _ _ _ 
Amazon Linux 2023n Linux 2023
\###\###\
\###\###\
\#/__ https://aws.amazon.com/linux/amazon-linux-2023/amazon-linux-2023
V~'.'> V~'.'>
/ \
/ \
/ \
/ \
/m/ /m/ 
Last login: Mon Jan 5 23:24:35 2026 from 18.206.107.27 18.206.107.27
ec2-user@ip-10-3-0-221 ~]$ aws configure configure
AWS Access Key ID [None]: None]
```



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Access keys

Credentials

To set up my EC2 instance to interact with my AWS environment, I configured the secret key and secret key ID.

Access keys are credentials for my applications and other servers to log into AWS and talk to my AWS services/resources.

Secret access keys are like the passwords that pairs with my access key ID (my username). I need both to access AWS services.

Best practice

Although I'm using access keys in this project, a best practice alternative is to use an IAM Role with the needed permission and attach it to the Instance for it to access other AWS services.



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In the second part of my project...

Step 4 - Set up an S3 bucket

In this step, I will launch a bucket in Amazon S3.

Step 5 - Connecting to my S3 bucket

In this step, I will head back to my EC2 instance et my EC2 instance to interact with your S3 bucket.

Connecting to my S3 bucket

The first command I ran was <<aws s3 ls>>. This command is used to access S3 and list the number of Buckets in the account.

When I ran the command again, the terminal responded by listing the objects..

```
Output format [None]:  
[ec2-user@ip-10-0-1-96 ~]$ aws s3 ls  
2025-03-26 00:44:11 cf-templates-1fkmehl98e47-ap-southeast-2  
2025-03-26 00:10:13 nextwork-devops-cicd-mar25  
2025-08-21 03:48:51 nextwork-vpc-project-maya  
[ec2-user@ip-10-0-1-96 ~]$ █
```



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Connecting to my S3 bucket

Another CLI command I ran was ` aws s3 ls s3://nextwork-vpc-project-` which returned the list of the s3 objects.

```
ec2-user@ip-10-3-0-136 ~]$ aws s3 ls s3://mjk-portfolio-bucket-portfolio-bucket  
2026-01-06 04:23:25  2431554 NextWork - Denzel is awesome.png is awesome.png  
2026-01-06 04:23:24  2399812 NextWork - Lelo is awesome.png is awesome.png  
ec2-user@ip-10-3-0-136 ~]$ 36 ~] $
```

Uploading objects to S3

To upload a new file to my bucket, I first ran the command << sudo touch /tmp/test.txt>> to create a blank text file

The second command I ran was `` aws s3 cp /tmp/test.txt s3://nextwork-vpc-project- `` This command creates a copy of the file in the bucket.

The third command I ran was ``bash aws s3 ls s3://nextwork-vpc-project- `` which validated that the file was successfully copied.

```
ec2-user@ip-10-0-1-96 ~]$ aws s3 ls s3://nextwork-vpc-project-maya
2025-08-21 03:59:30    2431554 NextWork - Denzel is awesome.png
2025-08-21 03:59:30    2399812 NextWork - Lelo is awesome.png
025-08-21 04:09:05          0 test.txt
```



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