



Access S3 from a VPC



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```
[ec2-user@ip-10-0-5-42 ~]$ aws s3 cp /tmp/test.txt s3://nextwork-vpc-project-hari
upload: ../../tmp/test.txt to s3://nextwork-vpc-project-hari/test.txt
[ec2-user@ip-10-0-5-42 ~]$ aws s3 ls s3://nextwork-vpc-project-hari
2024-10-06 07:06:32    2431554 NextWork - Denzel is awesome.png
2024-10-06 07:06:30    2399812 NextWork - Lelo is awesome.png
2024-10-06 07:29:21      0 test.txt
[ec2-user@ip-10-0-5-42 ~]$ █
```

Introducing Today's Project!

What is Amazon VPC?

Amazon VPC is a foundational AWS service that lets us control the underlying network for our resources, so that we can control traffic flow, monitor for security, organise our resources.

How I used Amazon VPC in this project

In today's project, we launch a VPC with public subnet and EC2 Instance, and I also directly accessed/managed an Amazon S3 bucket through the EC2 instance by using AWS CLI.

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

we 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 me nearly 90 minutes to complete.

In the first part of my project...

Step 1 - Architecture set up

In this step, I launch a VPC with 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.

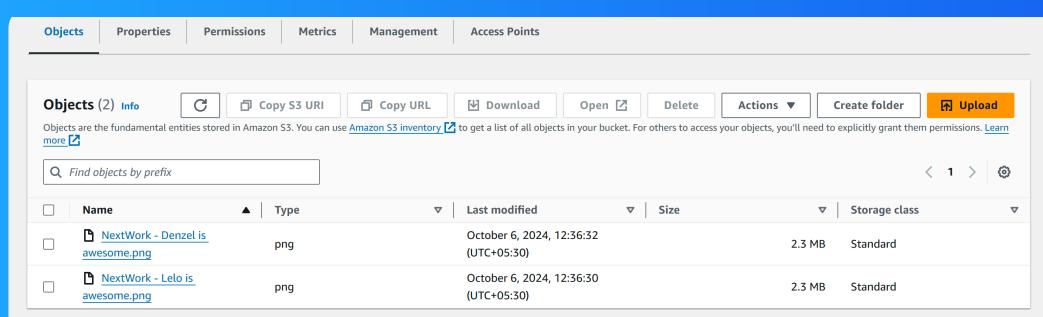
Step 3 - Set up access keys

In this step, we create access keys so that our EC2 Instance can have access to our AWS environment , specifically the ability to interact with S3 bucket.

Architecture set up

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

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





Running CLI commands

AWS CLI is a software we can download into a local computer's terminal so that we can have access to our AWS account and different actions without needing AWS management Console. I have access to AWS CLI because it's preinstalled in EC2 Instance.

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.

```
        #
`~\_\_###`      Amazon Linux 2023
~~\_\_\#\#\#\\
~~ \_\#\#\#
~~ \#\#|
~~ \#\#| https://aws.amazon.com/linux/amazon-linux-2023
~~ \#\#| V\_, _\-\>
~~ \#\#| /
~~ \#\#| /
~~ \#\#| /
[ec2-user@ip-10-0-5-42 ~]$ aws s3 ls

Unable to locate credentials. You can configure credentials by running "aws configure".
[ec2-user@ip-10-0-5-42 ~]$ aws configure
AWS Access Key ID [None]:
```

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 default output format.

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

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

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 an 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 we 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, we are using AWS CLI commands to try control/manage our S3 bucket. This means we are interacting with our S3 bucket through 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 key works i.e. my EC2 instance has accesss to my AWS environment.

```
ec2-user@ip-10-0-5-42 ~]$ aws s3 ls
2024-10-06 07:03:11 nextwork-vpc-project-hari
ec2-user@ip-10-0-5-42 ~]$ █
```

Connecting to my S3 bucket

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

```
[ec2-user@ip-10-0-5-42 ~]$ aws s3 ls s3://nextwork-vpc-project-hari
2024-10-06 07:06:32    2431554 NextWork - Denzel is awesome.png
2024-10-06 07:06:30    2399812 NextWork - Lelo is awesome.png
[ec2-user@ip-10-0-5-42 ~]$ █
```

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-vpc-project-hari' 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-hari' which returned the list of all objects in my S3 bucket including test.txt. This validated my EC2 through AWS CLI commands, can get access to other AWS(S3) services.

```
[ec2-user@ip-10-0-5-42 ~]$ aws s3 cp /tmp/test.txt s3://nextwork-vpc-project-hari
upload: ../../tmp/test.txt to s3://nextwork-vpc-project-hari/test.txt
[ec2-user@ip-10-0-5-42 ~]$ aws s3 ls s3://nextwork-vpc-project-hari
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```



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