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Create S3 Buckets with Terraform

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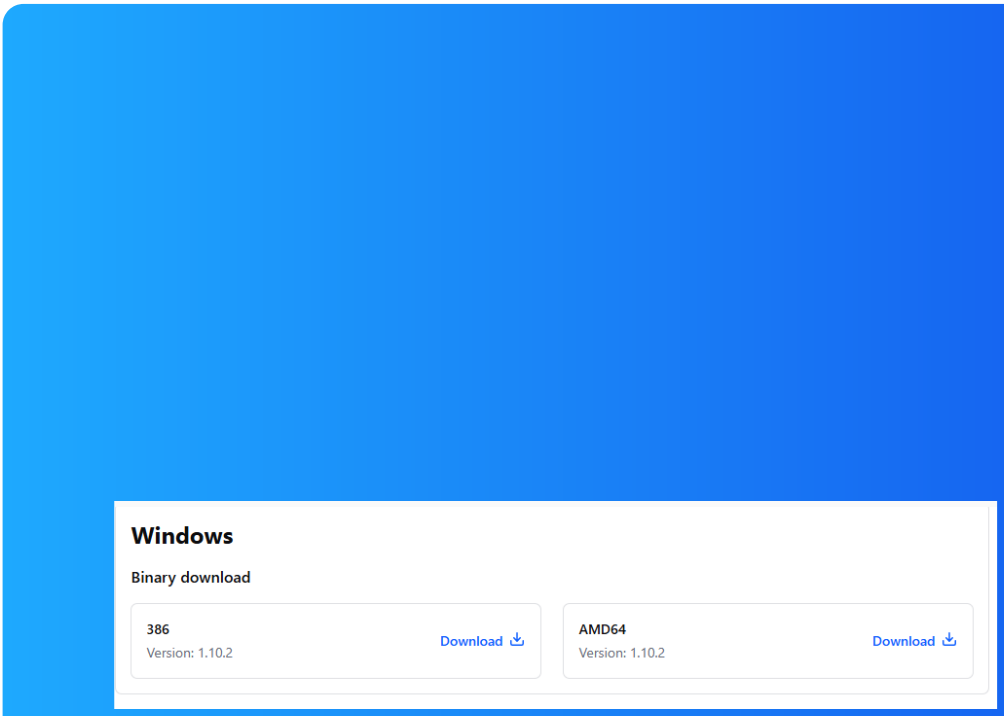

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Introducing Today's Project!

In this project, I will demonstrate how to use terrafrom to launch an S3 bucket. The goal is to install + setup Terraform, troubleshoot any errors (i.e. Installing the CLI), and sucessfuly plan + apply terraform config to launch s3 bucket

Tools and concepts

Services I used were Terraform, Amazon S3 AWS CLI, AWS IAM Key concepts I learnt include infrastructure as code, creating configuration files, modularity of code, using providers, plugins, state files, lock files, terraform concepts

Project reflection

This project took me approximately one hour The most challenging part was modifying s3 using terraform documentation.

n/a

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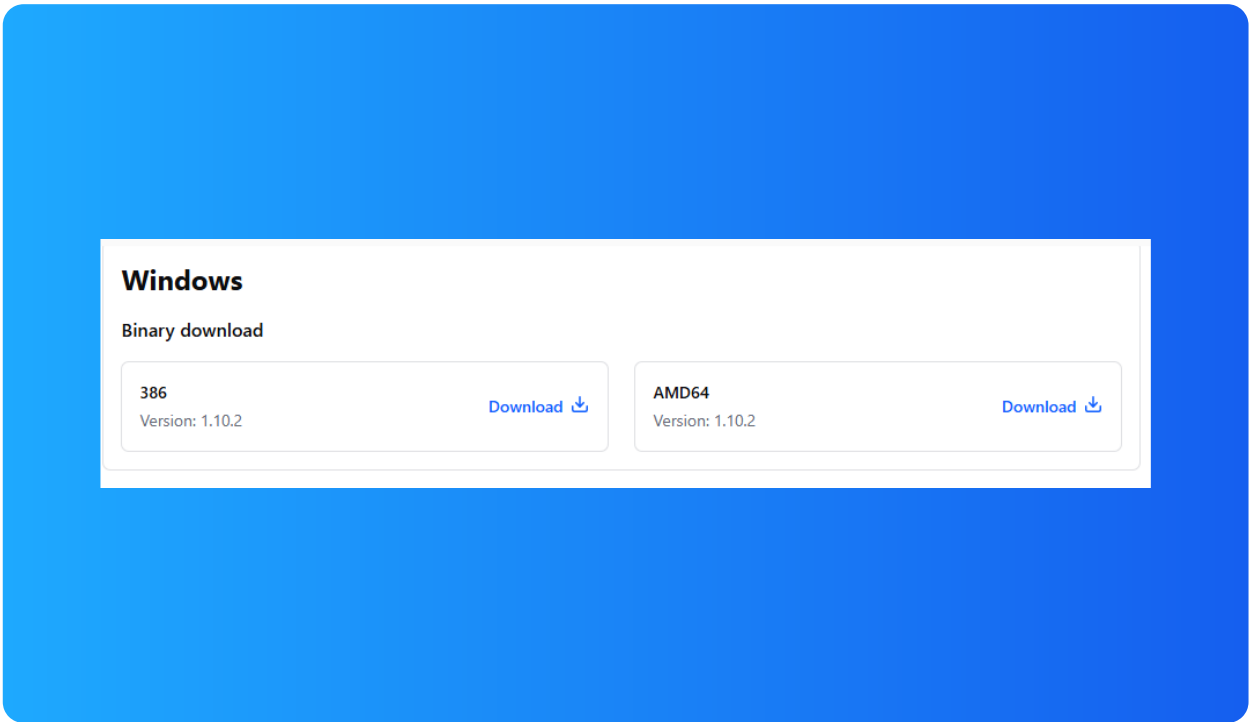
Introducing Terraform

Terraform is a tool for managing IT resources using code. I use Terrafrom to process a configuration file, I 've prepared the deailes the desired state of the infrastructure. Terrafrom then builds to setup that desired state.

Terraform is one of the most popular tools used for infrastructure as code (IaC), which is a way to manage IT infrastructure. Instead of manually managing resources using the console/text commands in CLI, IAC automate that process with code.

Terraform uses configuration files to understand the desired state of my infrastructure main.tf is that i use in terraform to describe the desired state.



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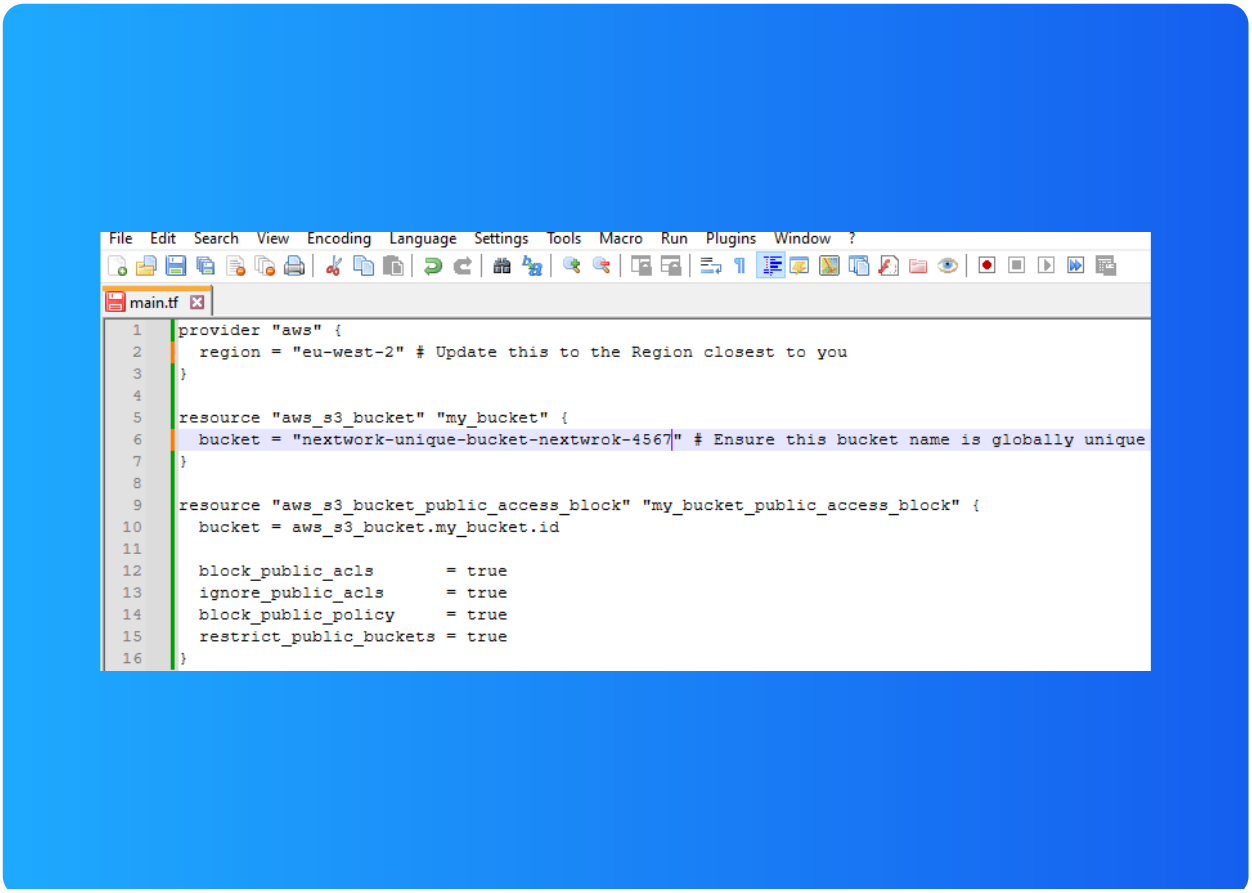
Configuration files

The configuration is structured in blocks instead of a single block of code. The advantage of doing this is modularity is the ability to workon/update different parts of main.tf without affecting other parts. great for teams collaborating to

My main.tf configuration has three blocks

The first block indicates that we are using AWS for Ifrastructure The second block provisions an Amazon S3 bucket The third block manages the buckets permissions I.e. blocking all public access



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Customizing my S3 Bucket

For my project extension, I visited the official Terraform documentation to look for ways I can customize my bucket's configurations. The documentation shows example config all the available parameter for a resource and the rules for using it.

I chose to customise my bucket by adding tags because that lets me identify the project that i launched it for later on. When I launch my bucket, I can verify my customization by visting the 'tags' panel in the s3 bucket.

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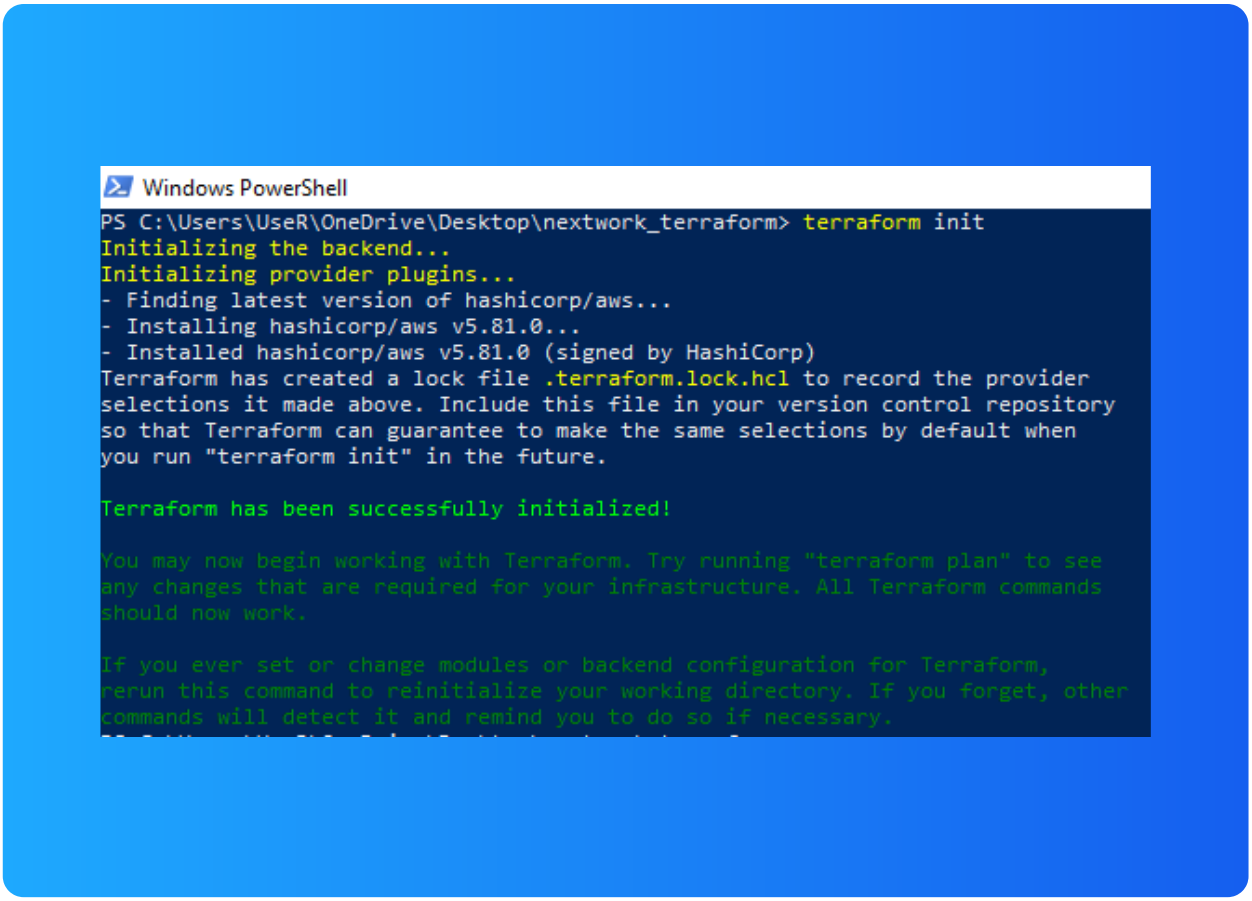
Terraform commands

I ran 'terraform init' to initalize terraform, this means getting it set up the backend to store state files, and install the necessary plugins i.e. the AWS Provider plugin

Next, I ran 'terraform plan' to compare the resources/infrastructure in the main.tf file, and compare that against infrastructure current state. Then share back the execution plan i.e. how running main.tf will impact our infrastructure.



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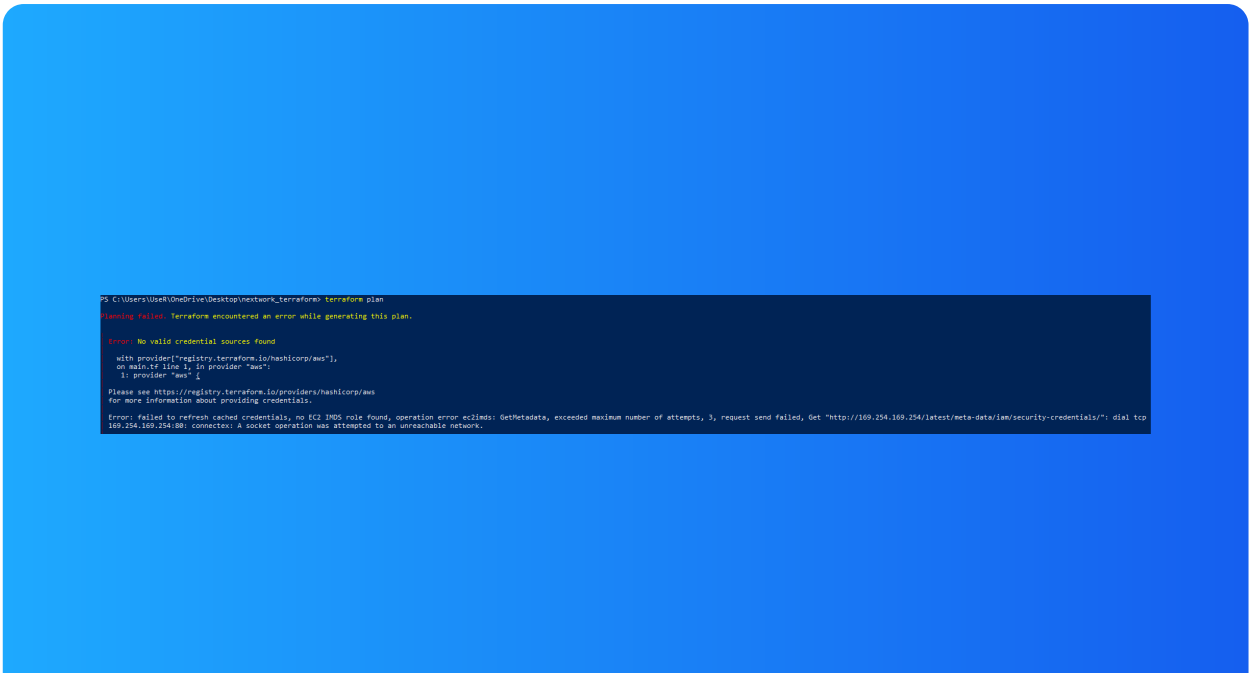
AWS CLI and Access Keys

When I tried to plan my Terraform configuration, I received an error message that says no valid credentials found because my local terminal was not setup with aws credinitals yet. this needs to be setup use aws provider plugin

To resolve my error, first I installed AWS CLI, which is AWS coomand line tool for interacting with AWS infrastructure. instead of using the AWS Management Console, the CLI lets me run text commands to do the same thing from local pc

I set up AWS access keys so that we have a way to 'log into my AWS account over the cli in my local computer. once the access key ID and secret access key are passed through 'aws configure' our terminal now has the neccessary AWS credentials.



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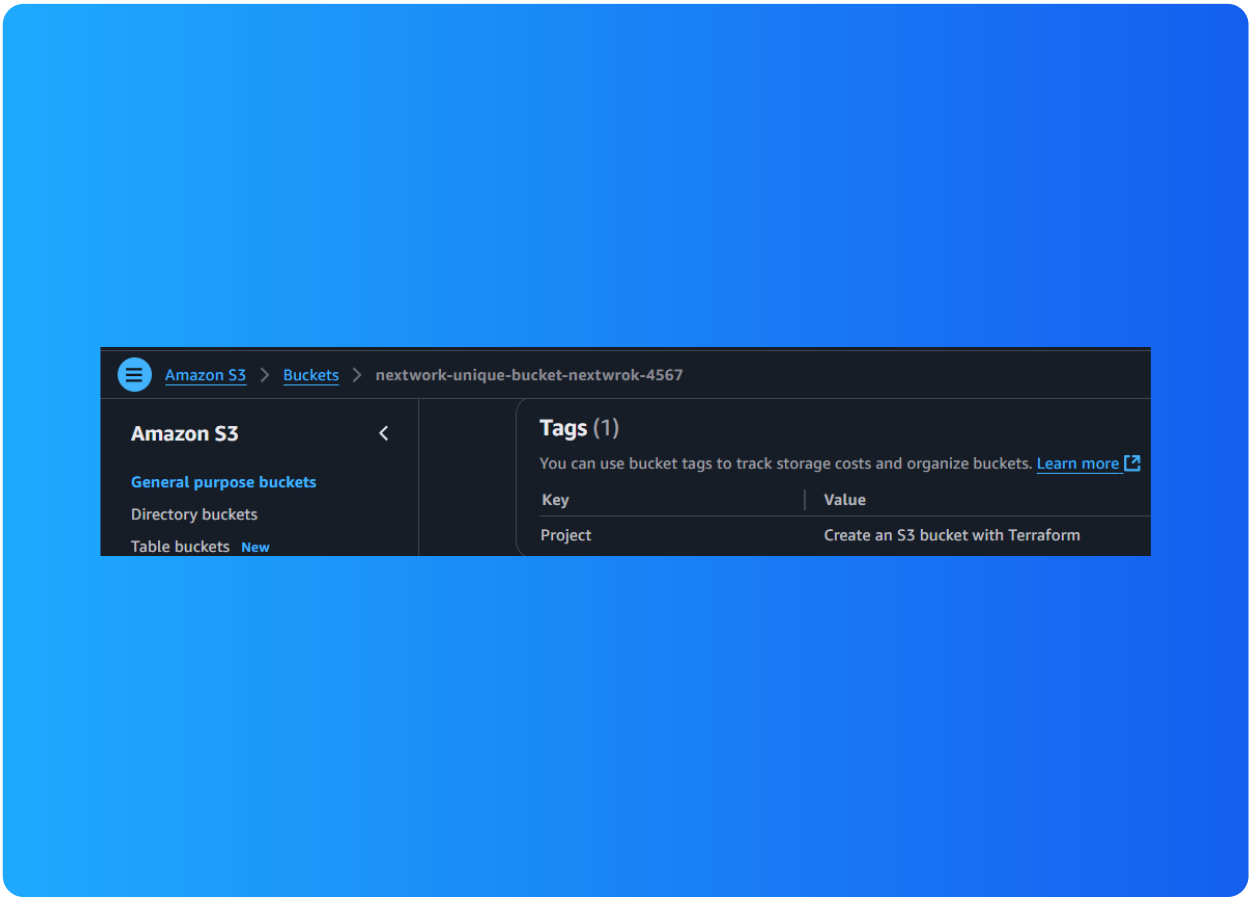
Lanching the S3 Bucket

I ran 'terraform apply' to get terraform to apply the chnages/updates it showed us when we ran 'terrafrom plan' Running 'terraform apply' will affect my AWS account by creating two resources -an s3 bucket and its set of permission settings

The sequence of running terraform init, plan, and apply is crucial because I need to initalize terrafrom first before we get to make any comparisons between main.tf and current infrastructure and connect to aws in the first place



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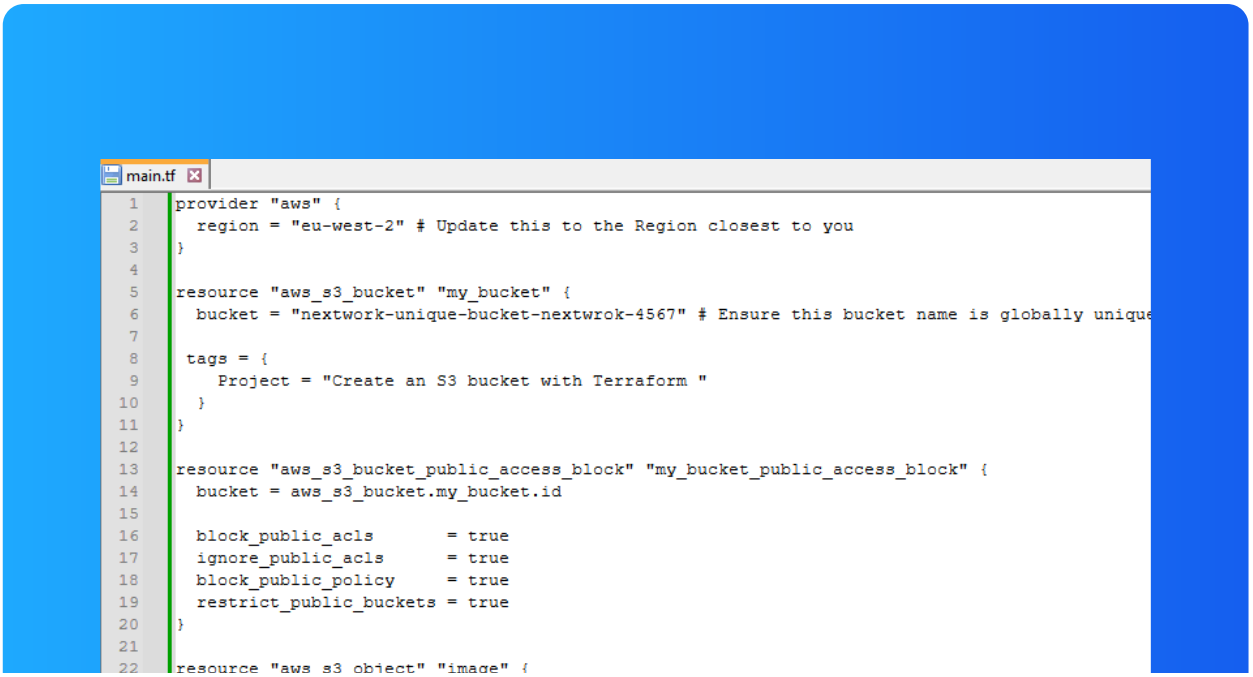
Uploading an S3 Object

I created a new resource block to upload an image called image.png inot the s3 bucket the image will be uploaded straight away without being nested in a subfolder in the bucket.

We need to run terraform apply again because i have updated terraform config file, which means there are changes that terraform needs to review and compare with my current infrastructure again. This time only new resource is created in the image

To validate that I've updated my configuration successfully, I checked the s3 bucket and confirmed a new image is inside i also downloaded the image back to me and confirmed that it was the correct image that was initally uploaded



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