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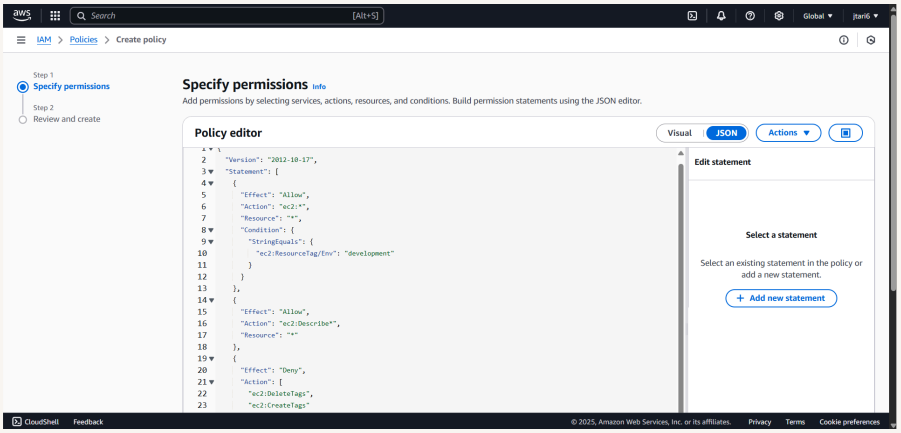
Cloud Security with AWS IAM

Ogun Tari Joseph



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Introducing Today's Project!

In this project, I will demonstrate connecting EC2 instances to an IAM policy. I'm doing this project to learn more about cloud security

Tools and concepts

Services I used wereAWS IAM and EC2. Key concepts I learnt include user creation, cloud security, and user permissions.

Project reflection

This project took me approximately 20 minutes. The most challenging part was setting up the IAM user, but it was enjoyable for me.

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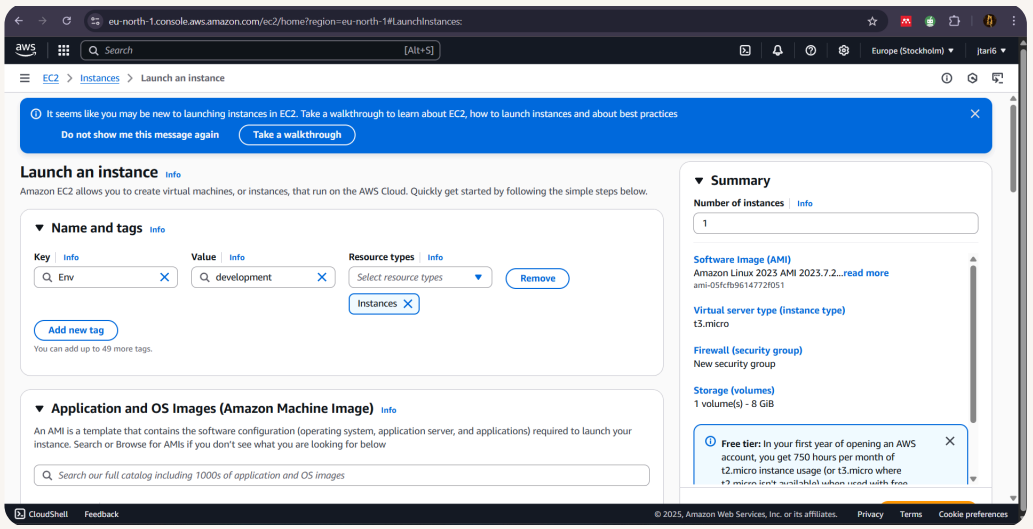
Tags

Tags are used for classifying and organizing AWS resources, and this is to ensure the purpose of similar AWS resources are not mixed up.

The tag I've used on my EC2 instances is called Env, which stands for the environment the instances are in. The value I've assigned for my instances are production and development, which are the two environments available.



IAM Policies

IAM Policies are JSON documents that permit select actions, resources and so on.

The policy I set up

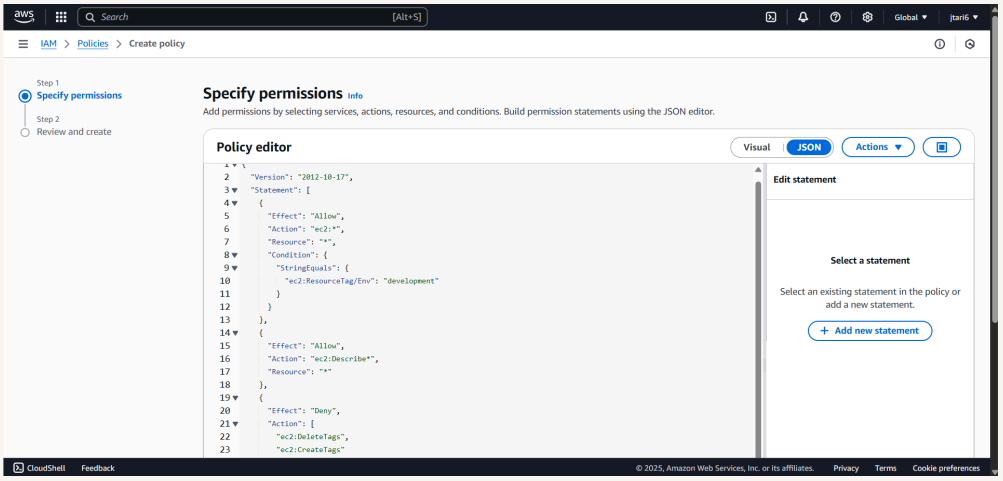
For this project, I've set up a policy using JSON, which is the standard format the policies are in.

I've created a policy that allows certain actions to be carried out the instances I created that are tagged with the tags I made.

When creating a JSON policy, you have to define its Effect, Action and Resource.

The Effect, Action, and Resource attributes of a JSON policy mean the allowing or denying the action, the details of the action, and the resources that will be affected by said action.

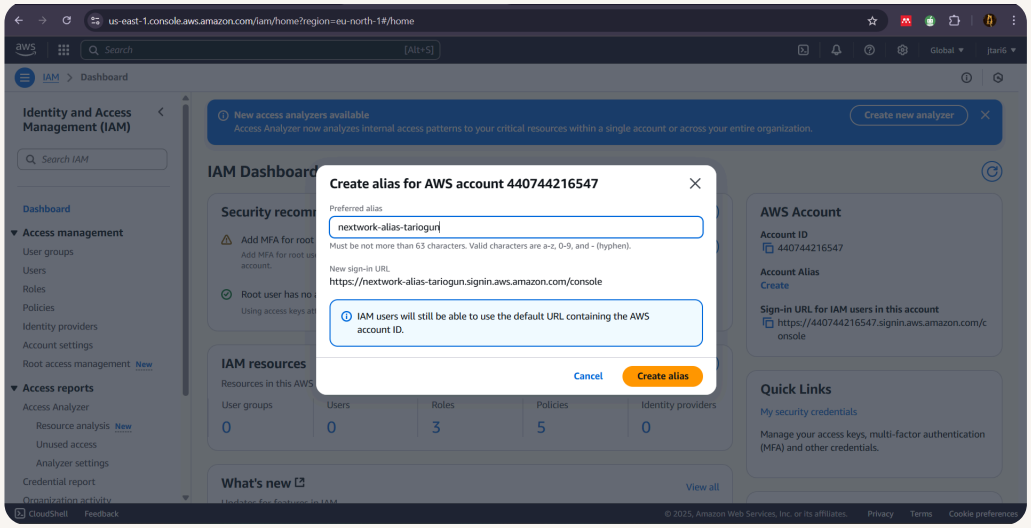
My JSON Policy



Account Alias

An account alias is an alternative and easier name to access the AWS management console.

Creating an account alias took me less than a minute. Now, my new AWS console sign-in URL is https://nextwork-alias-tariogun.signin.aws.amazon.com/console



IAM Users and User Groups

Users

IAM users are people who are granted access to an AWS console and are restricted by set policies, which makes them unable to take any actions other than the ones they intend to do.

User Groups

IAM user groups are a collection of IAM users that share similar permissions and these groups are used for better organization.

I attached the policy I created to this user group, which means every member of said group is subject to the policy.

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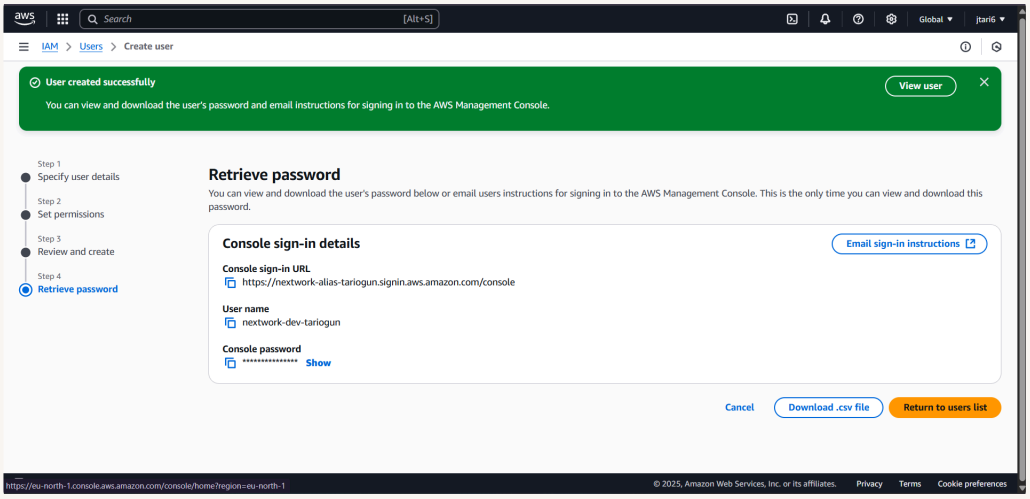
Logging in as an IAM User

The first way is by copying it and sending it to the user. The second way is to set up the user's email to be a recipient of the details from the console.

Once I logged in as my IAM user, I noticed I was denied access to certain things. This was because I had not been granted permission for those things.



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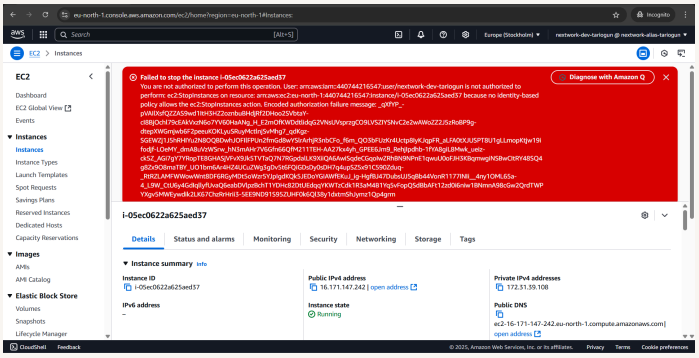
Testing IAM Policies

I tested my JSON IAM policy by stopping both instances, and I was only able to stop one, which was what the policy stated I had permission to do.

Stopping the production instance

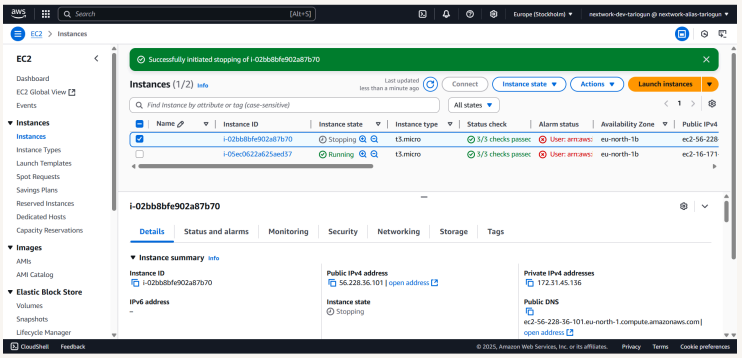
When I tried to stop the production instance, a large red notification popped up which siad I did not have permission to stop the instance. This was because in the policy, I was only granted permission to stop the development instance.



Testing IAM Policies

Stopping the development instance

Next, when I tried to stop the development instance, it was successful, since I had permission to do that.



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