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Cloud Security with AWS IAM

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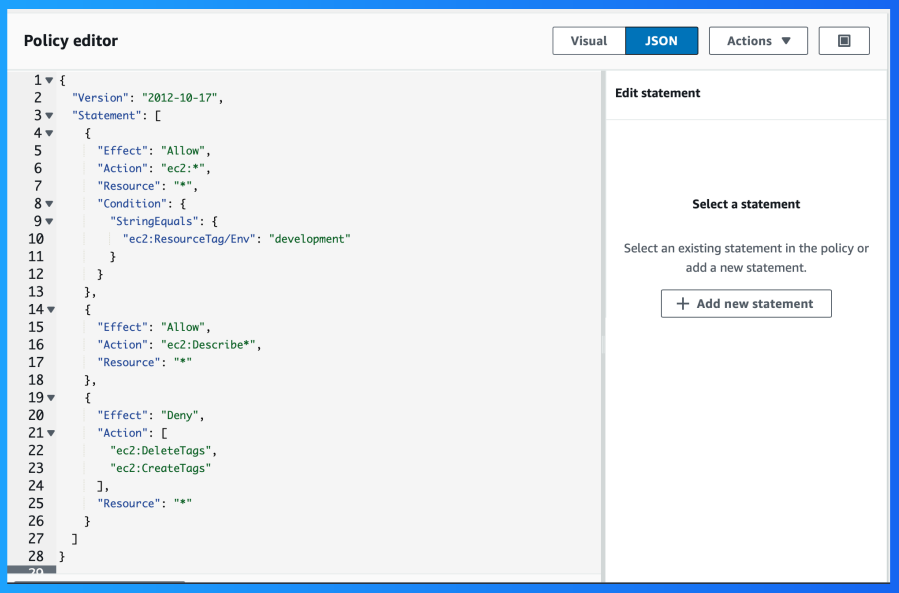

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Introducing today's project!

What is AWS IAM?

AWS IAM is a security service that is used to manage access to AWS resources and what a user/s can do with the AWS resources.

How I'm using AWS IAM in this project

I used AWS IAM to create and manage the user's access to my AWS resources as well their ability to alter my AWS EC2 instances.

One thing I didn't expect...

How simple it was to create a user group and create a new user.

This project took me...

An hour and a half.

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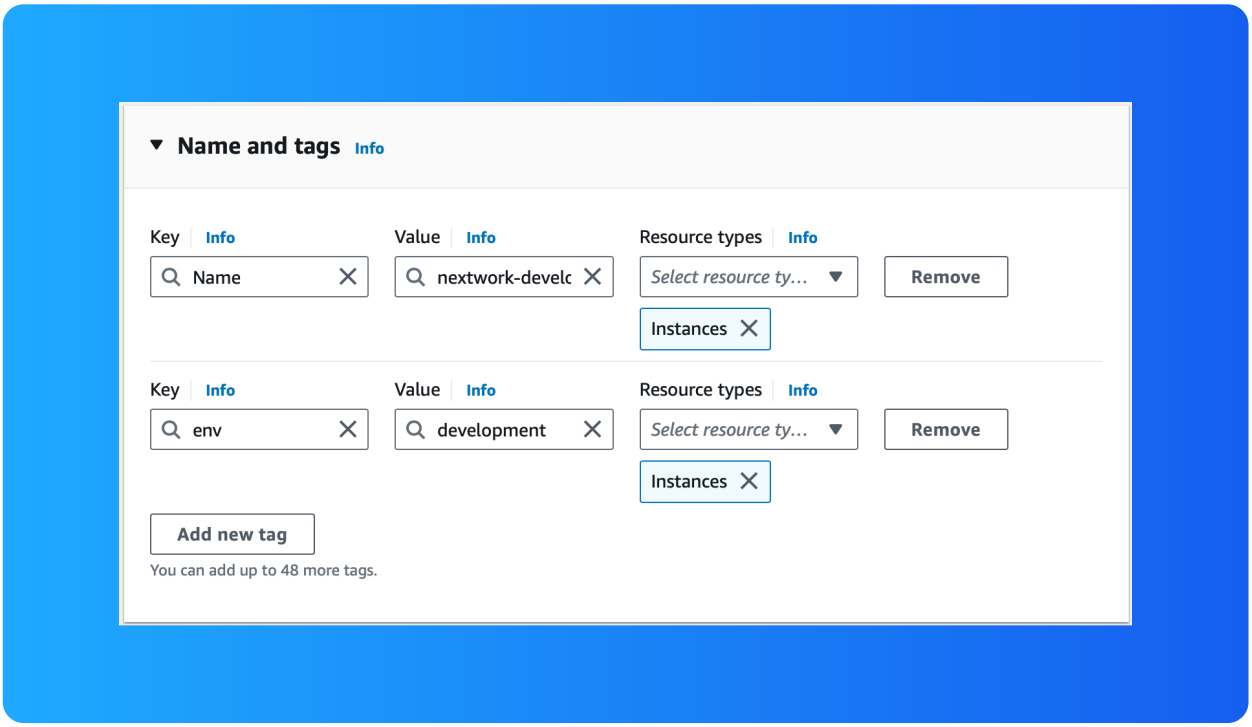
Tags

Tags are useful to organise and display what type of resource is being deployed.

The tag I've used on my EC2 instances is called, env for enviroment and the value I've assigned for my instances are production and development.



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IAM Policies

IAM Policies are rules that are set up to give permission to or deny to users, groups or roles, these rules are highly customisable and in depth to ensure freedom within a contained security structure.

The policy I set up

For this project, I've set up a policy using the JSON editor in the IAM policy creator.

I've created a policy that ensures resoruces labelled as Env - development are impacted and they will have certain permissions attached to the Env - development environment.

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

The Effect, Action, and Resource attributes of a JSON policy means, the policy is allow or denied access to the specific resource, the action defines what operation is being perfomed such as read or write, resource specifies the target resource.

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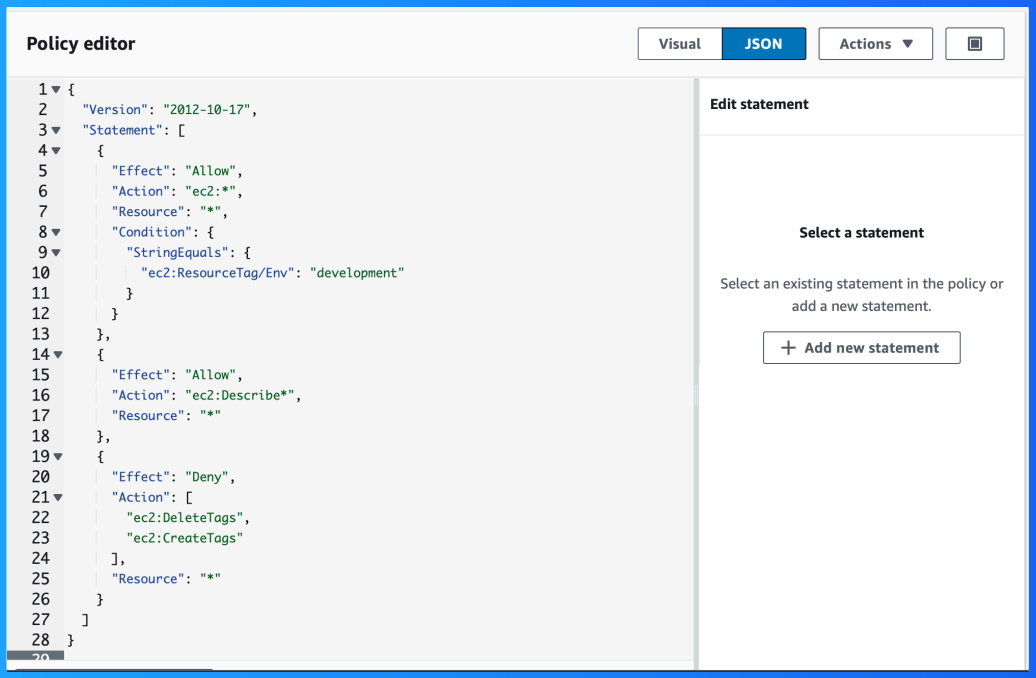
My JSON Policy



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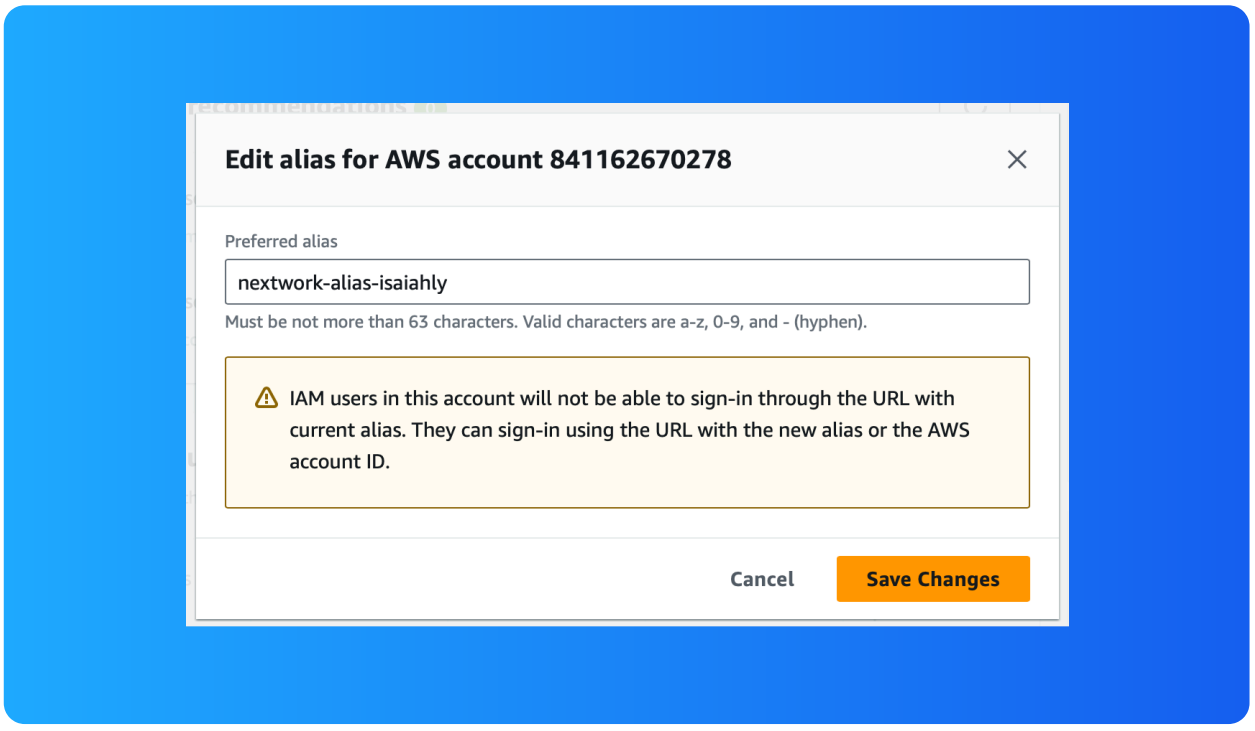
Account Alias

An account alias is copy of an account which that has a different name although it can access the same areas as the primary account.

Creating an account alias took me, 5 minutes. Now, my new AWS console sign-in URL is https://nextwork-alias-isaiahly.signin.aws.amazon.com/console.



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IAM Users and User Groups

Users

IAM users are users that access to the AWS resources without having an AWS, they have specfic permissions that allow them to access specific resources.

User Groups

IAM user groups are a way to organise and manage users permissions for a group of users.

I attached the policy I created to this user group, which means they have specific permissions attached to their account now.

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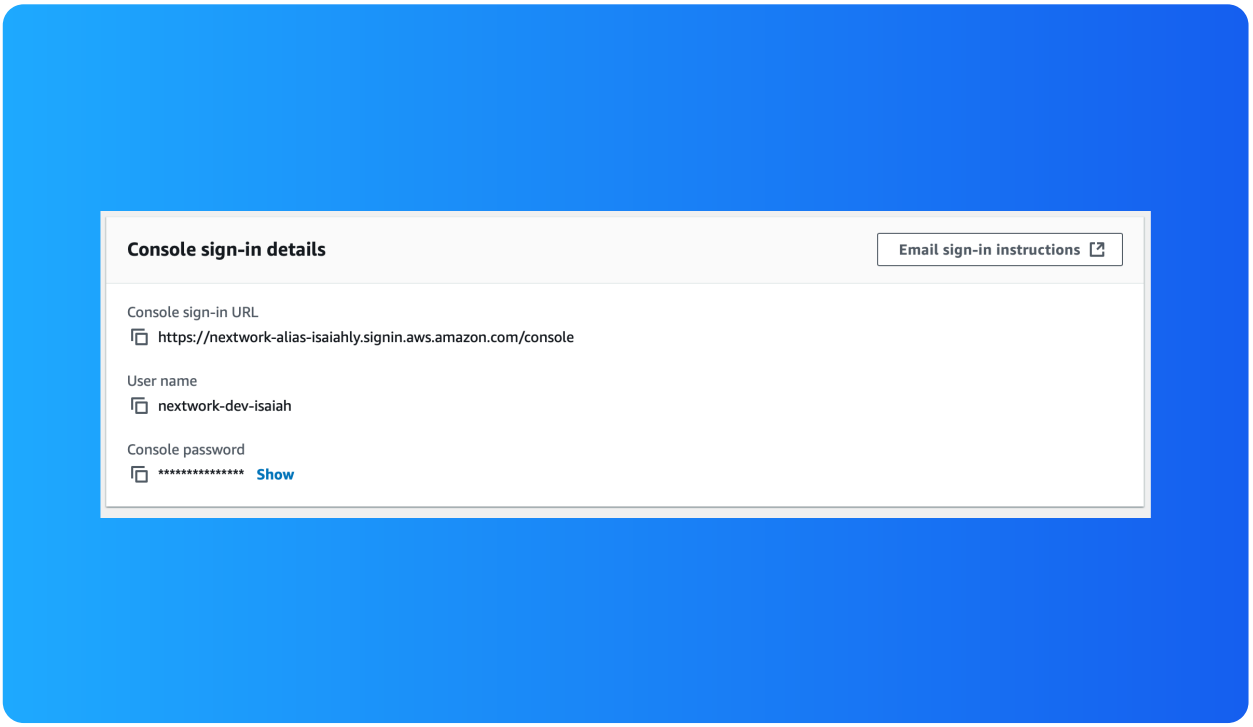
Logging in as an IAM User

The first way is thier Console sign-in URL or their individual User name, and the Console Password.

Once I logged in as my IAM user, I noticed several access denied pop ups, this was because of the preset group policy that I set up earlier.



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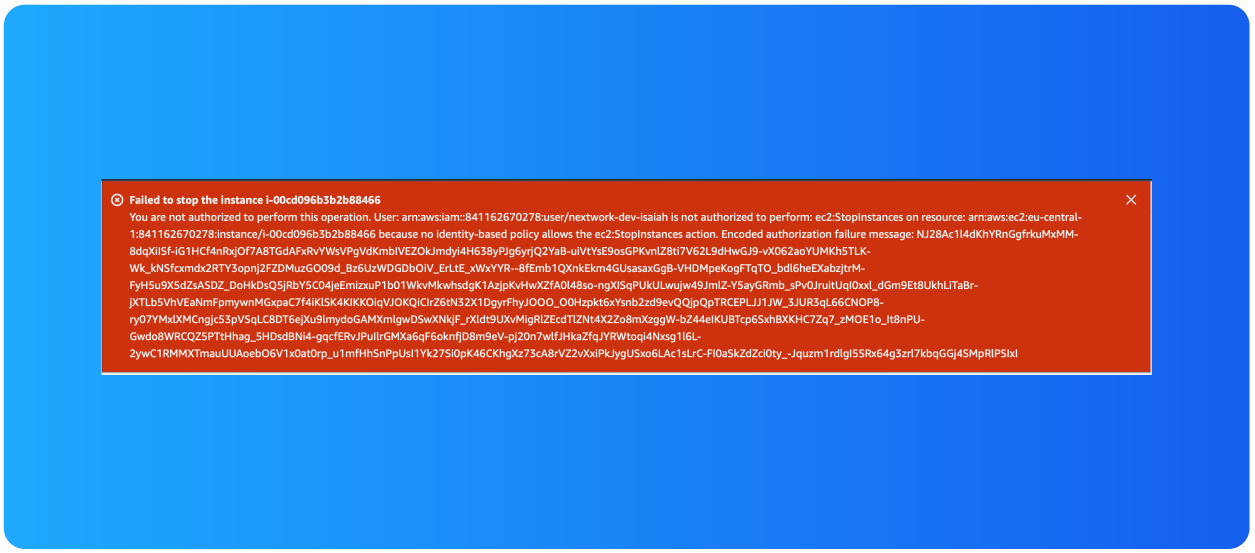
Testing IAM Policies

I tested my JSON IAM policy by stopping the EC2 development instance which successfully stopped while the EC2 production instance could not be sucessfully stopped.

Stopping the production instance

When I tried to stop the production instance, I was greeted with a large red error popup on my screen. This was because the group policy disables users in the group to stop the instance they are trying to stop.



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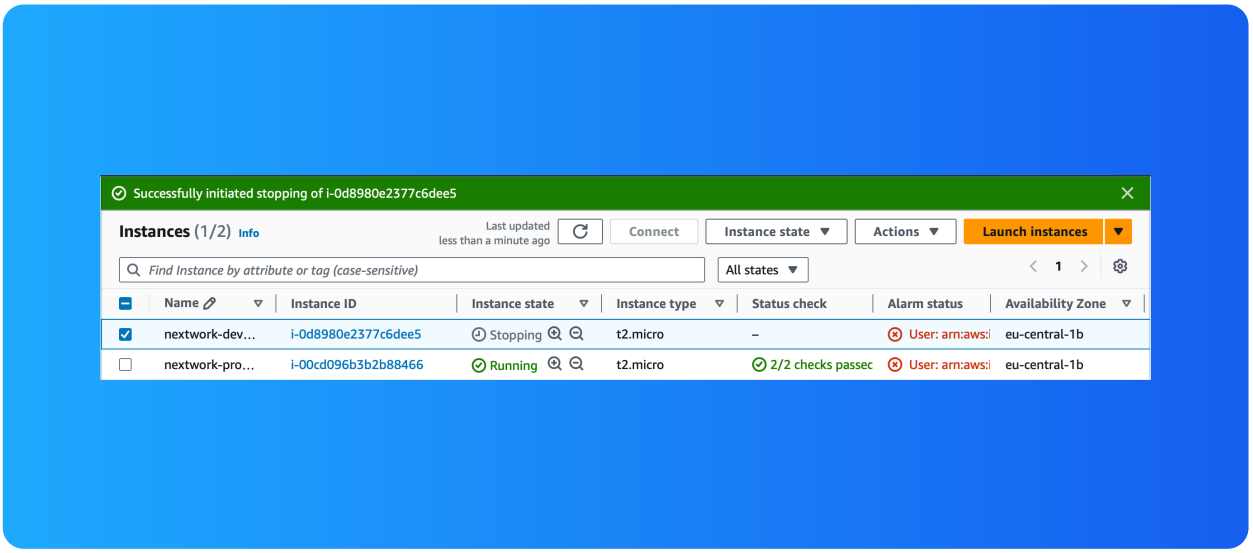
Testing IAM Policies

Stopping the development instance

Next, when I tried to stop the development instance it was successful. This was because the JSON IAM group policy allowed users in the group to make changes to the developement instance.



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