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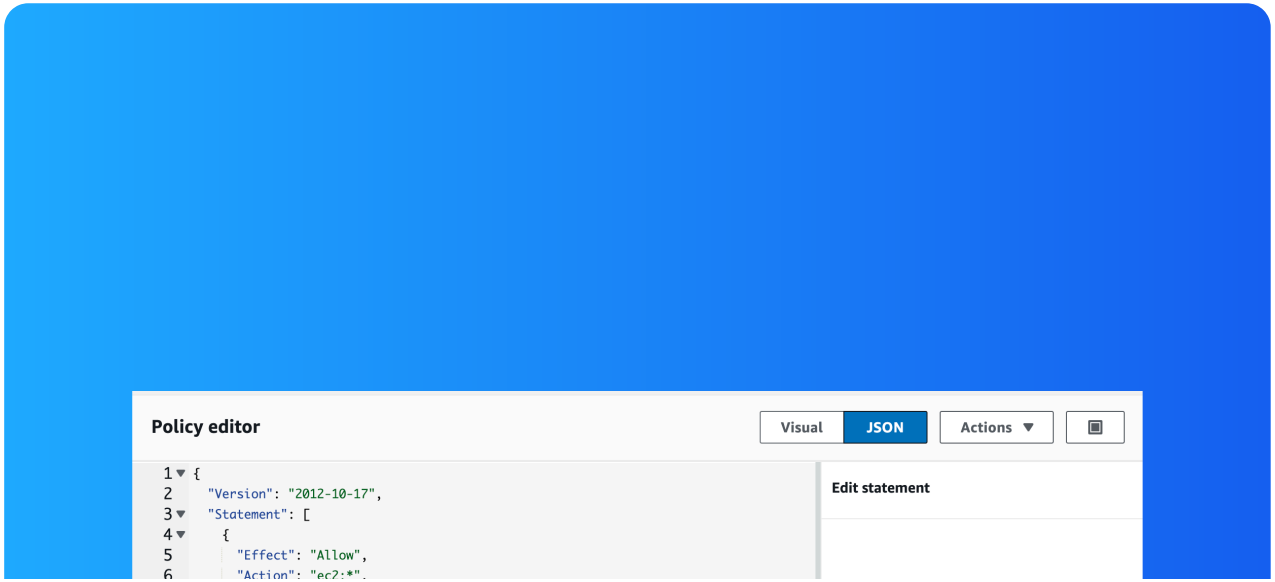
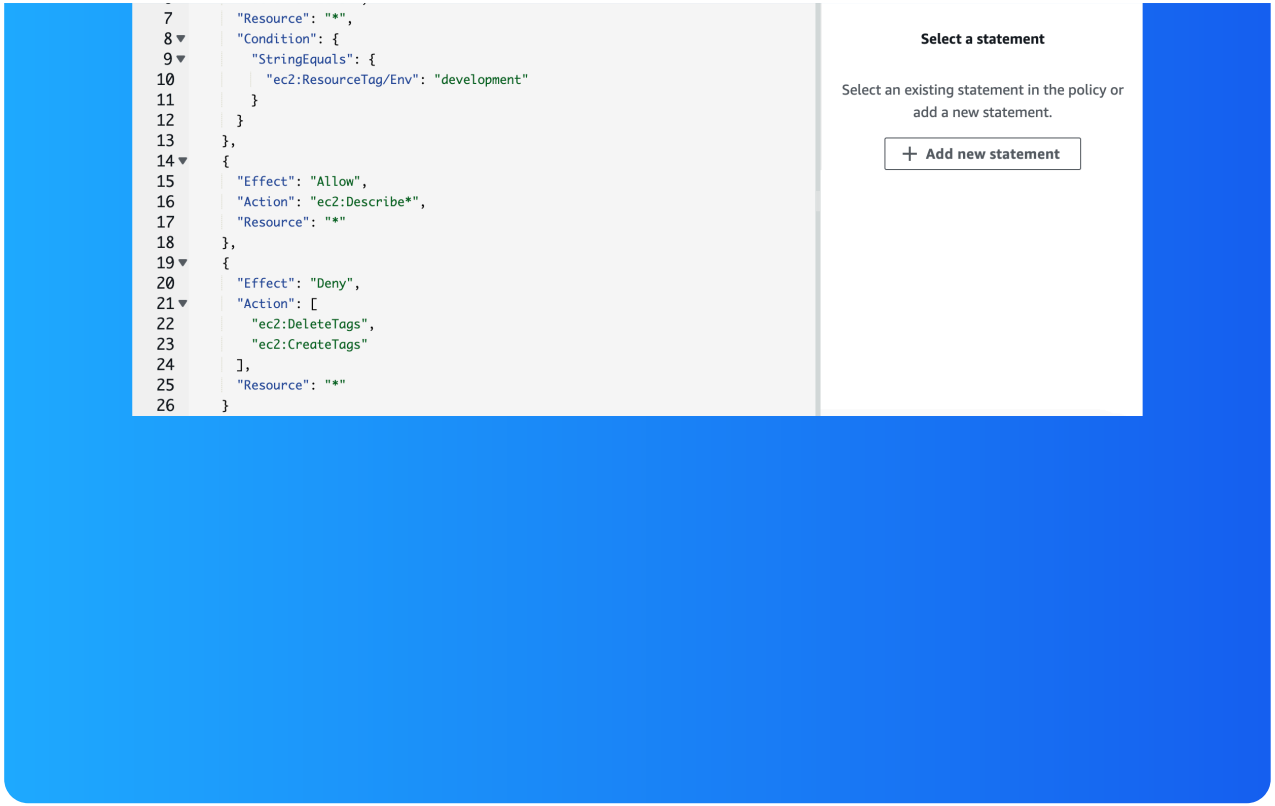
Cloud Security with AWS IAM

James La





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Introducing today's project!

What is AWS IAM?

AWS IAM is a service that helps you control access to your AWS resources. This is useful because it significantly reduces security risks and operational overhead in our AWS operations.

How I'm using AWS IAM in this project

In today's project, I used AWS IAM to create policies and giver users and user groups specific access to specific resources.

One thing I didn't expect...

I didn't expect to be able to create accounts that can access and manage my resources, so easily.

This project took me...

This project took me around 1 hour to complete.

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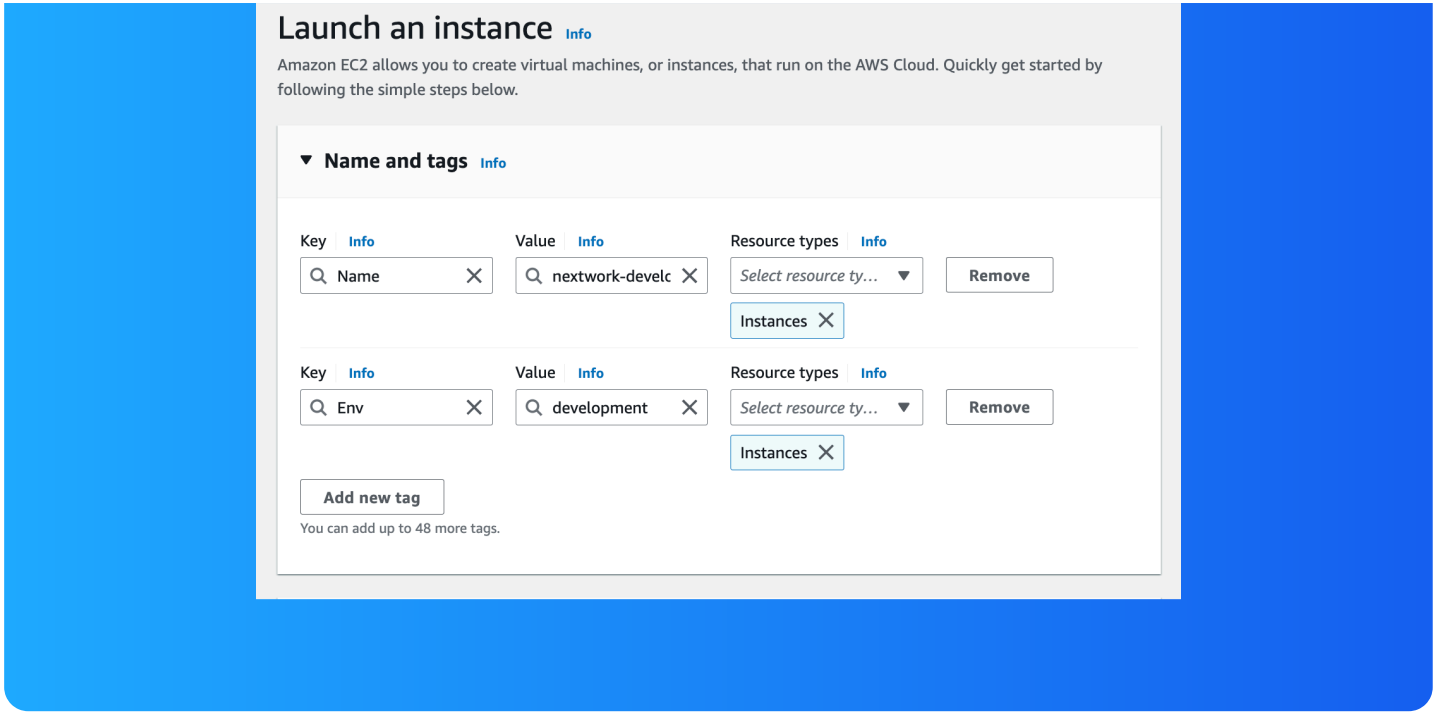
Tags

Tags are labels we can add to instances to make it easier to organize our instances.

The tag I've used on my EC2 instances is called "Env". The value I've assigned for my instances are "production" and "development". This will allow me to use the "Env" tag to filter between instances that are designed for production or development.



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IAM Policies

IAM Policies are a set of rules that defines who can do what with my AWS resources.

The policy I set up

For this project, I've set up a policy using JSON.

I've created a policy that allows any action to be taken on EC2 instances with a the "Env - Development" tag, anyone to get information on EC2 instances, and it also denies users from deleting and creating tags.

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

The Effect, Action, and Resource attributes of a JSON policy are key components that define the permissions granted or denied by that policy.

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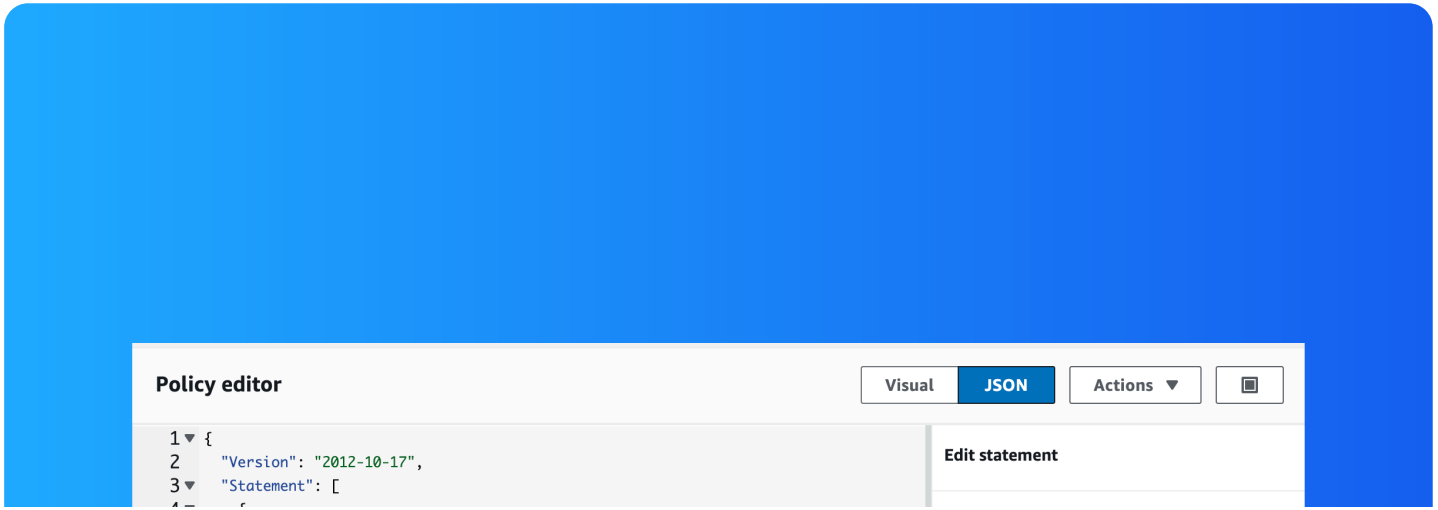
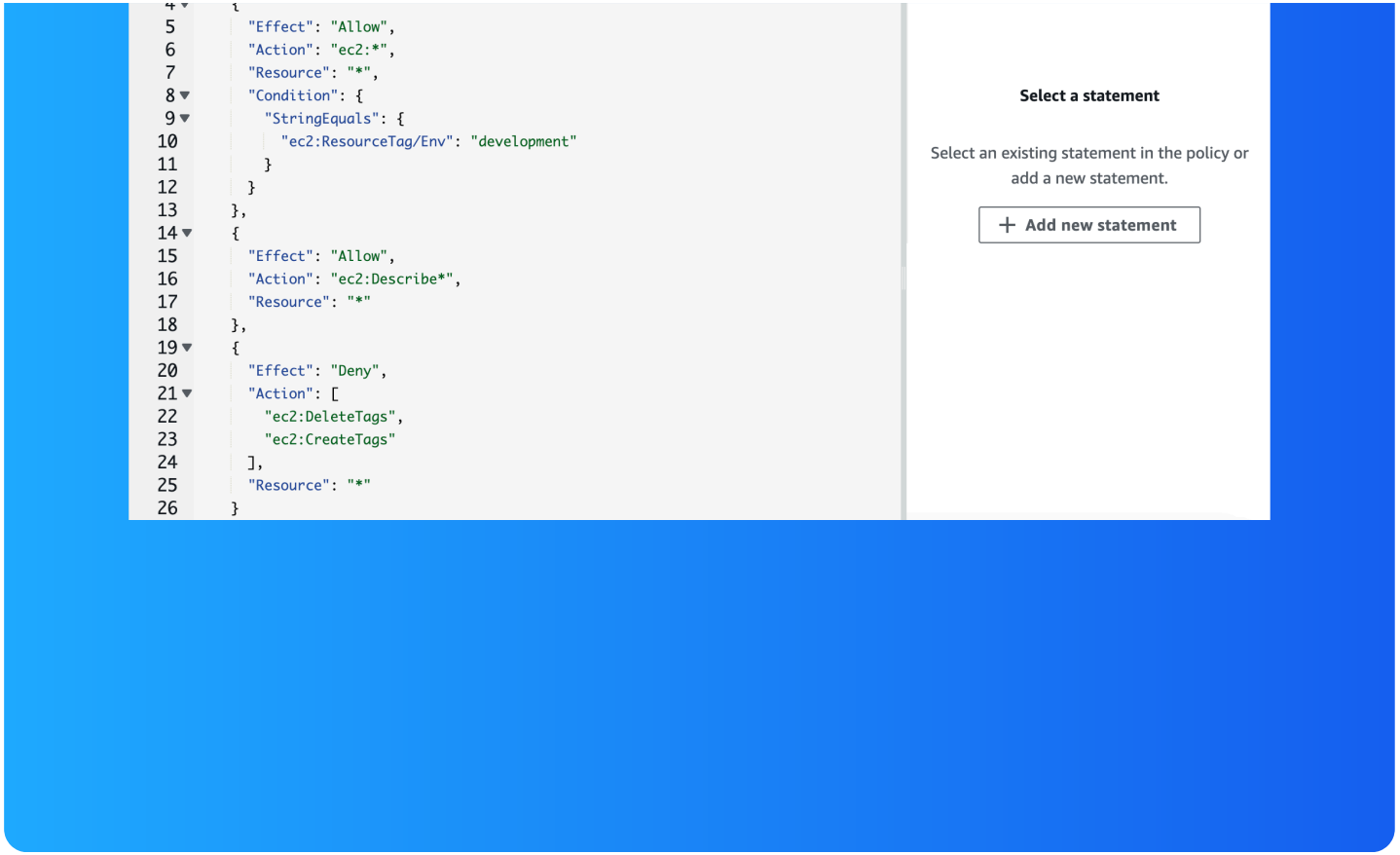
My JSON Policy





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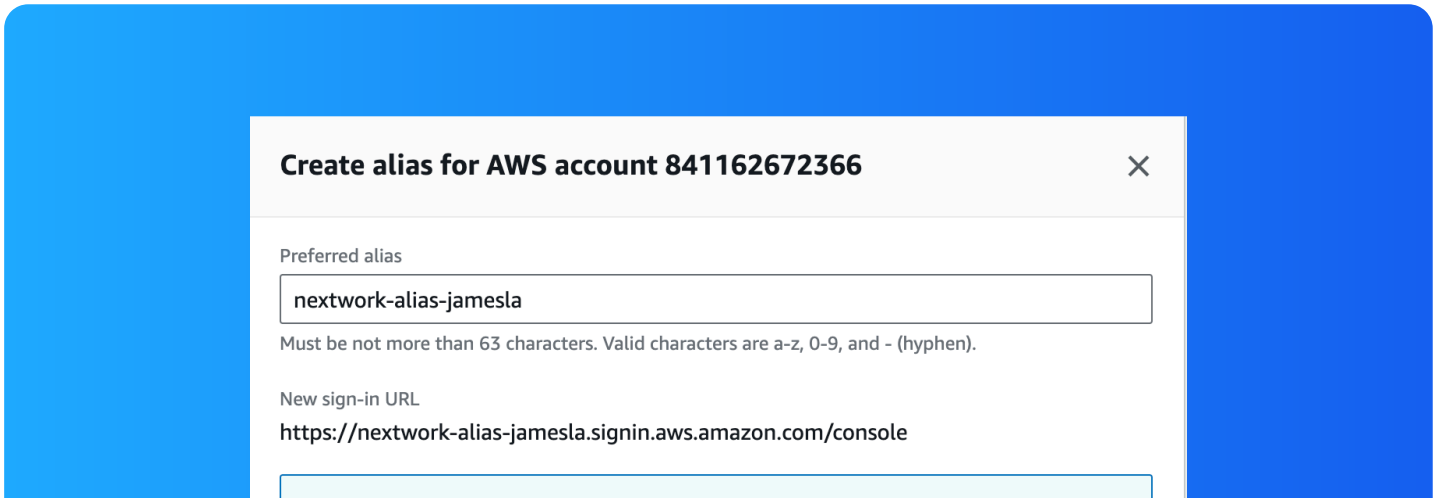
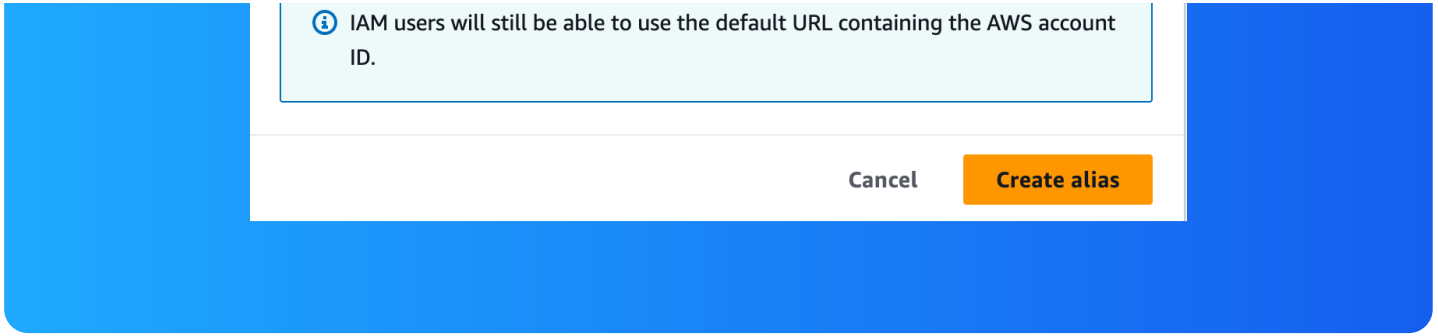
Account Alias

An account alias is name for my AWS account that I can use to sign in to the AWS Management console instead of using my Account ID.

Creating an account alias took me 5 seconds. It was as simple as clicking a button, setting a title, and clicking "create alias".

Now. my new AWS console sign-in URL is "https://nextwork-alias-jamesla.signin.aws.amazon.com/console"





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IAM Users and User Groups

Users

IAM users are users or services that can interact with AWS resources.

User Groups

IAM user groups are collections or folders of IAM users. IAM user groups allow us to collectively manage users without having to manage each and every user individually.

I attached the policy I created to this user group, which means all users in the selected group all follow the given policy.

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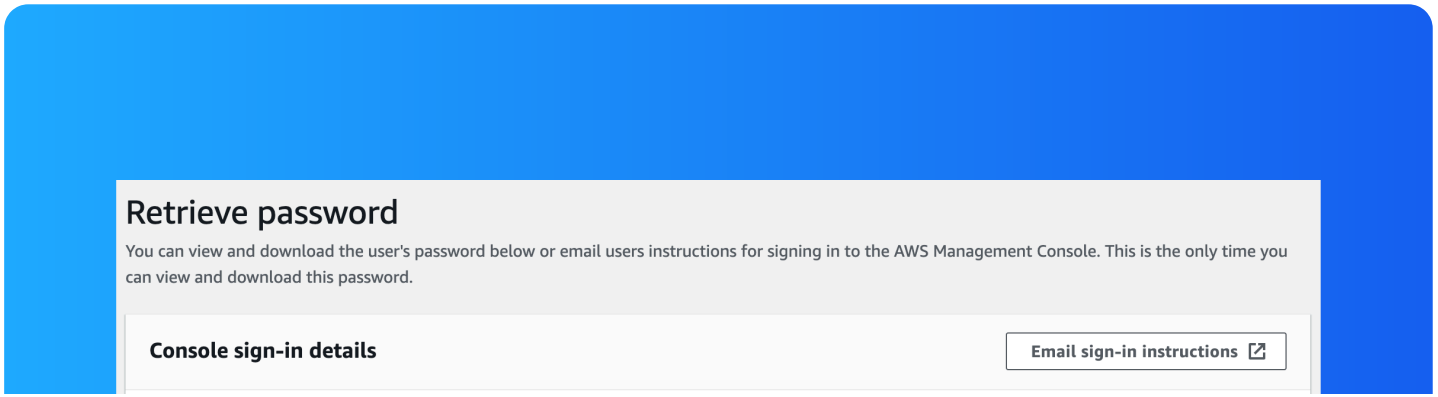
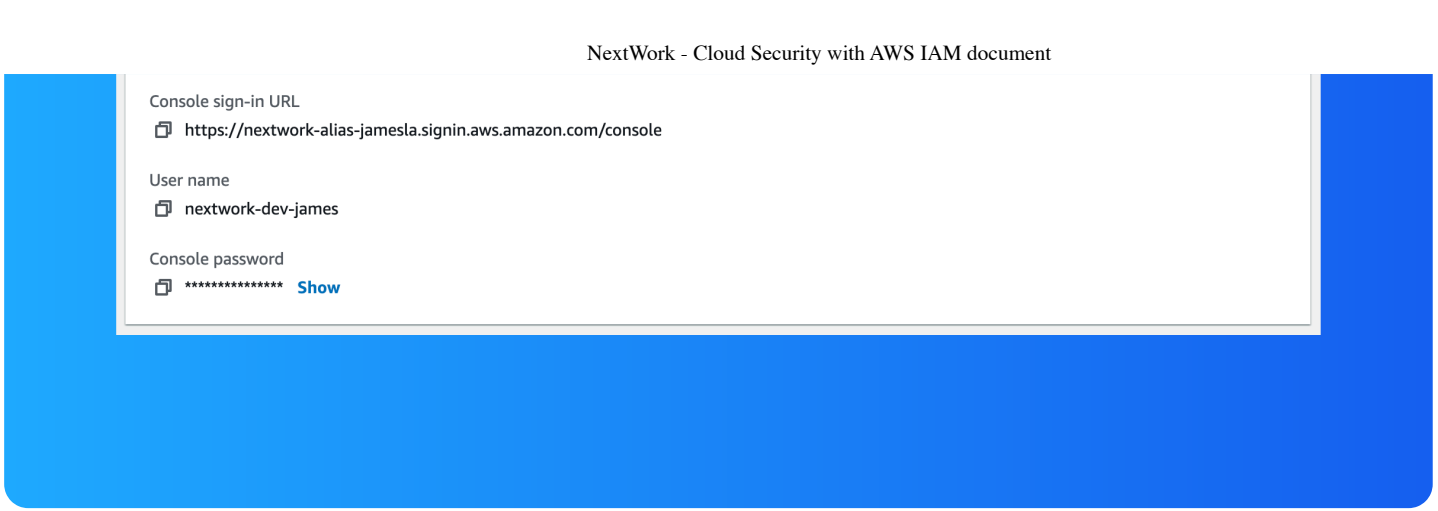
Logging in as an IAM User

The first way is to email the sign-in instructions to the user through a button when you create the user, and the second way is to download a provided csv file, with the details, and directly send it to the user.

Once I logged in as my IAM user, I noticed many of the dashboard panels were showing "Access denied"!





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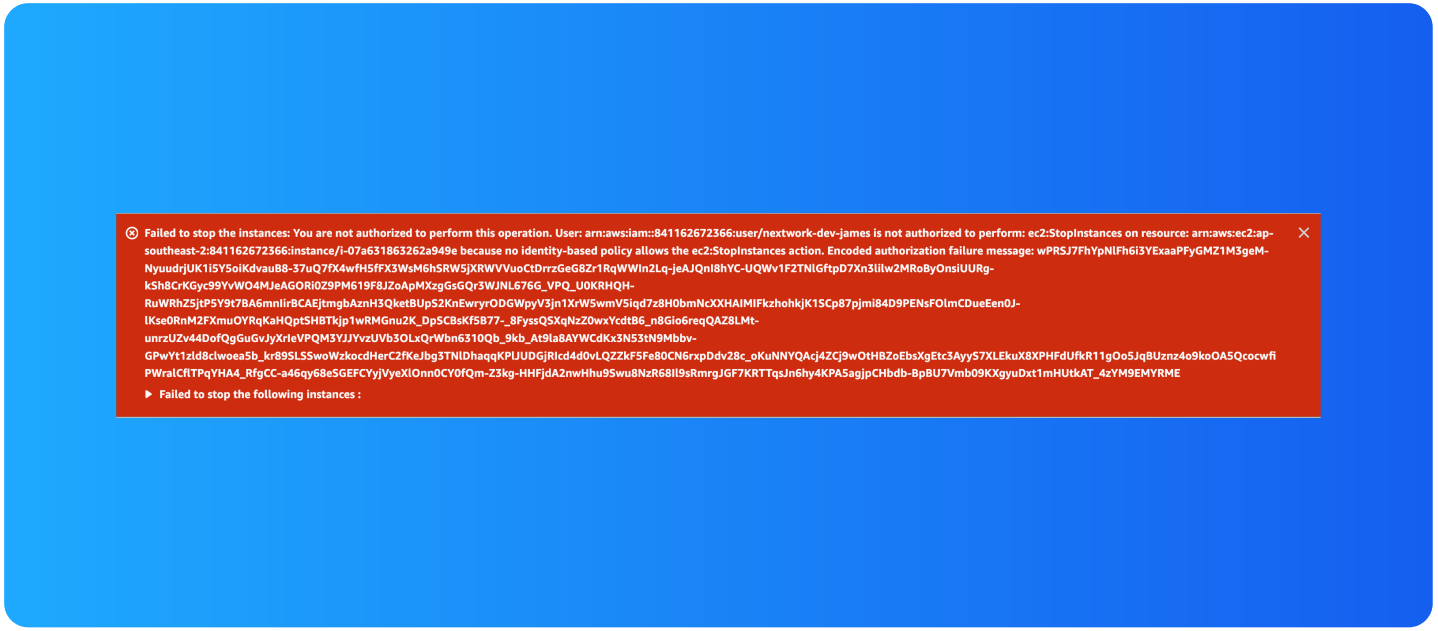
Testing IAM Policies

I tested my JSON IAM policy by stopping both the production and development EC2 instances.

Stopping the production instance

When I tried to stop the production instance, I got a big error saying that it failed to stop the instance.



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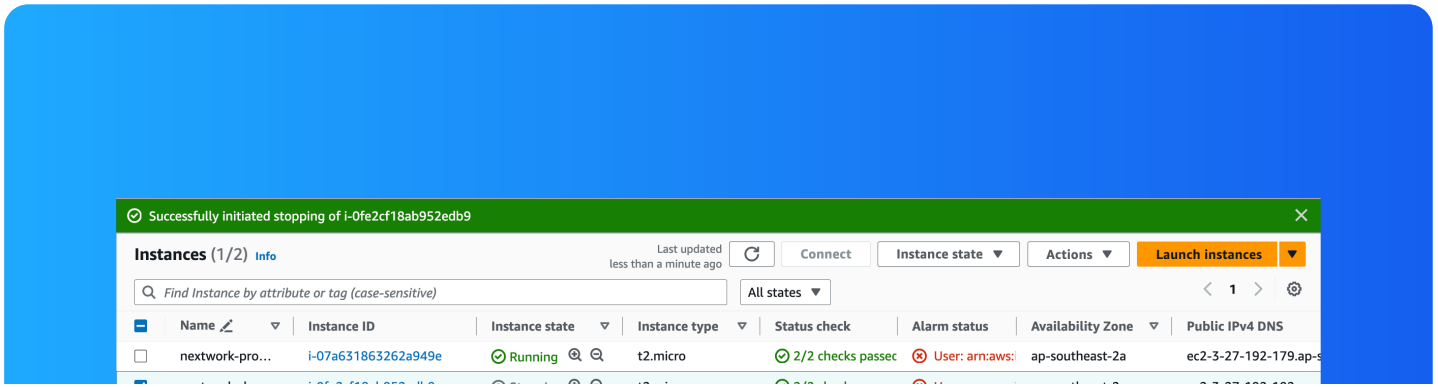
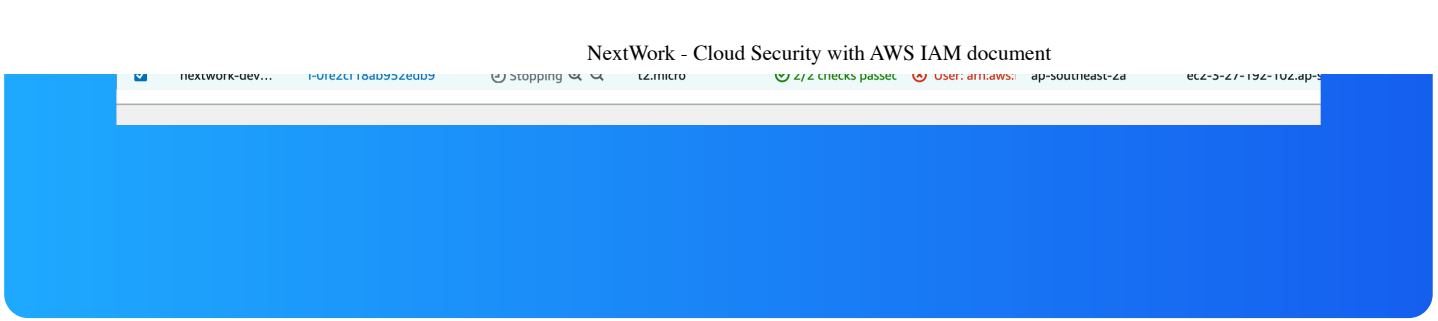
Testing IAM Policies

Stopping the development instance

Next, when I tried to stop the development instance, I got a notification saying it successfully stopped the instance.





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