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Cloud Security with AWS IAM

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Introducing today's project!

What is AWS IAM?

AWS IAM (Identity and Access Management) allows you to securely manage access to AWS resources by creating and managing users, groups, and permissions.

How I'm using AWS IAM in this project

In today's project we have used AWS IAM to create user and used policy to grant and deny access on AWS EC2 service.

One thing I didn't expect...

One unexpected aspect in many projects can be the complexity of managing permissions and access control.

This project took me...

It took 30 mins for the project and another 30 mins for documentation

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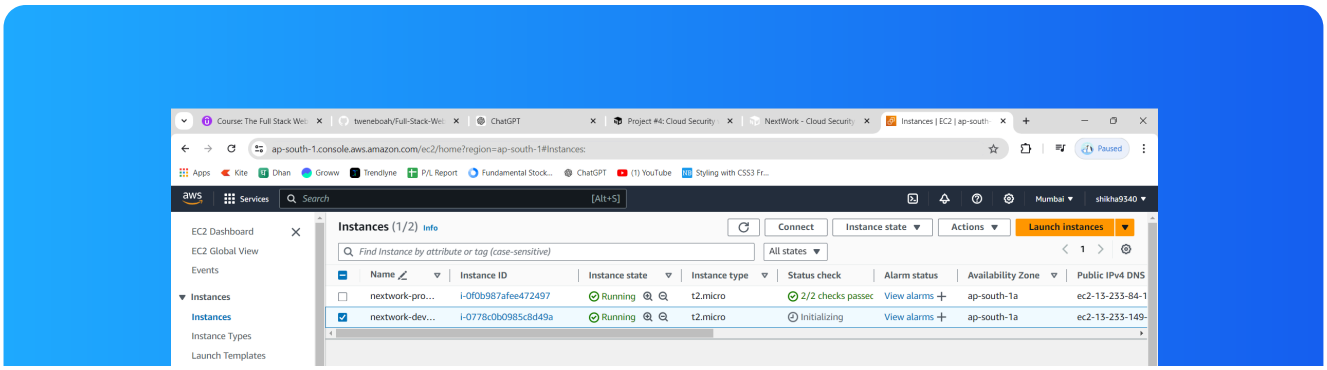
Tags

Tags are like labels you can attach to AWS resources for organization.This tagging helps us with identifying all resources with the same tag at once (they are useful filters when you're searching for something), cost allocation, and applying policy.

The tag lâ▤▤ve used on my EC2 instances is called Env The value lâ▤▤ve assigned for my instances are production and devlopment.



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IAM Policies

IAM Policies are rules, It gives permissions to IAM user, groups, or roles

The policy I set up

For this project, Iâ▤▤ve set up a policy using json method.

Iâ▤▤ve created a policy that allow full access (ec2:* actions) to EC2 instance tagged with â▤▤Env=developmentâ▤▤ while denying creating or deleting tags for all resources.

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

When writing JSON Policy statements, you have to specify the: Effect: Simply means that user is allow or deny Action: Specifies that the action is allowed or deny Resource: It defines the services is allowed or deny to access.

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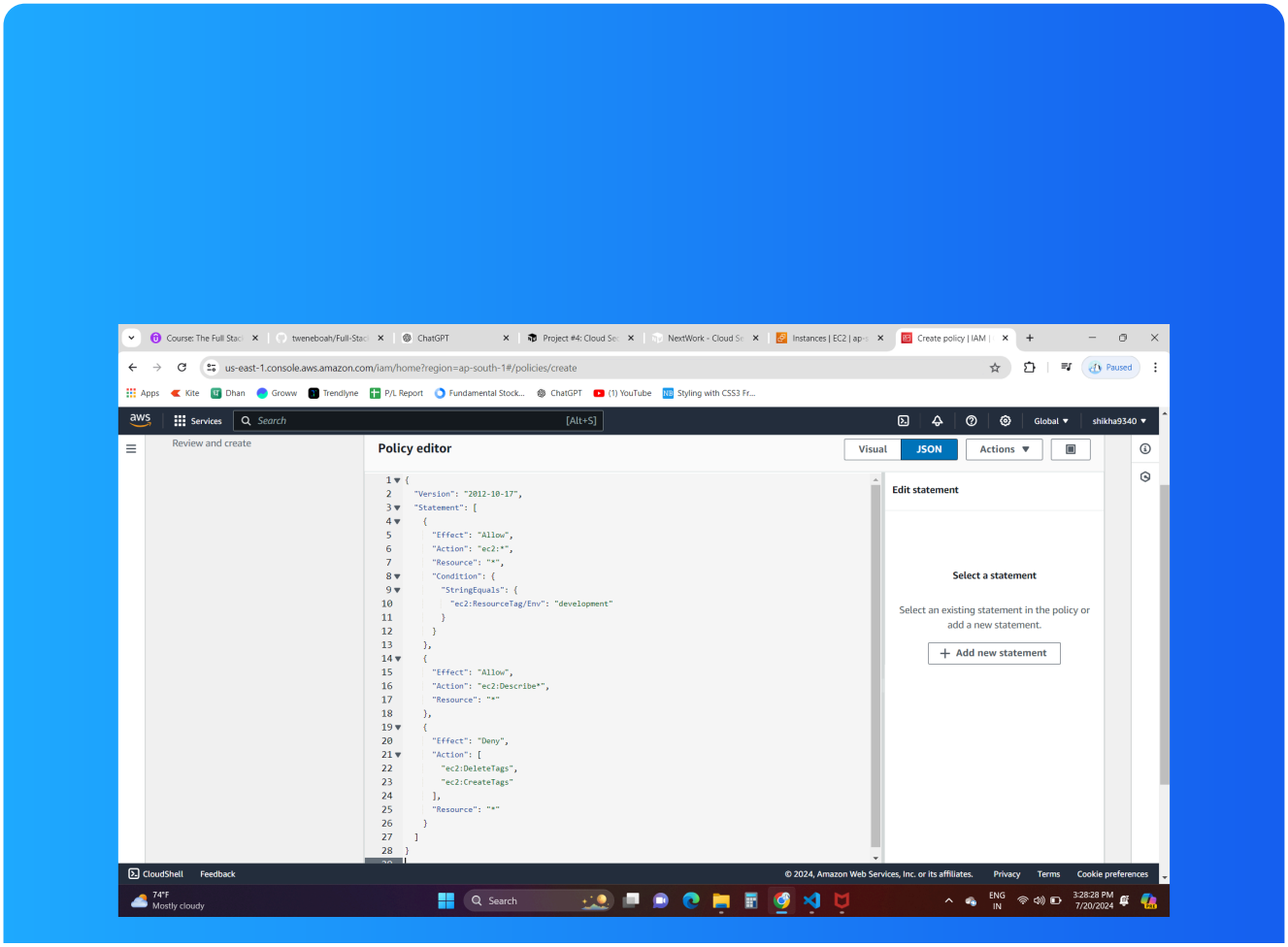
My JSON Policy



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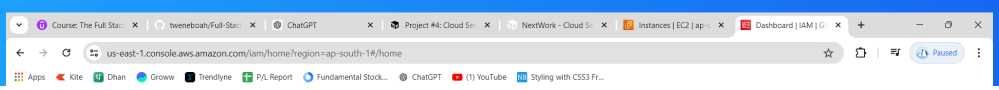
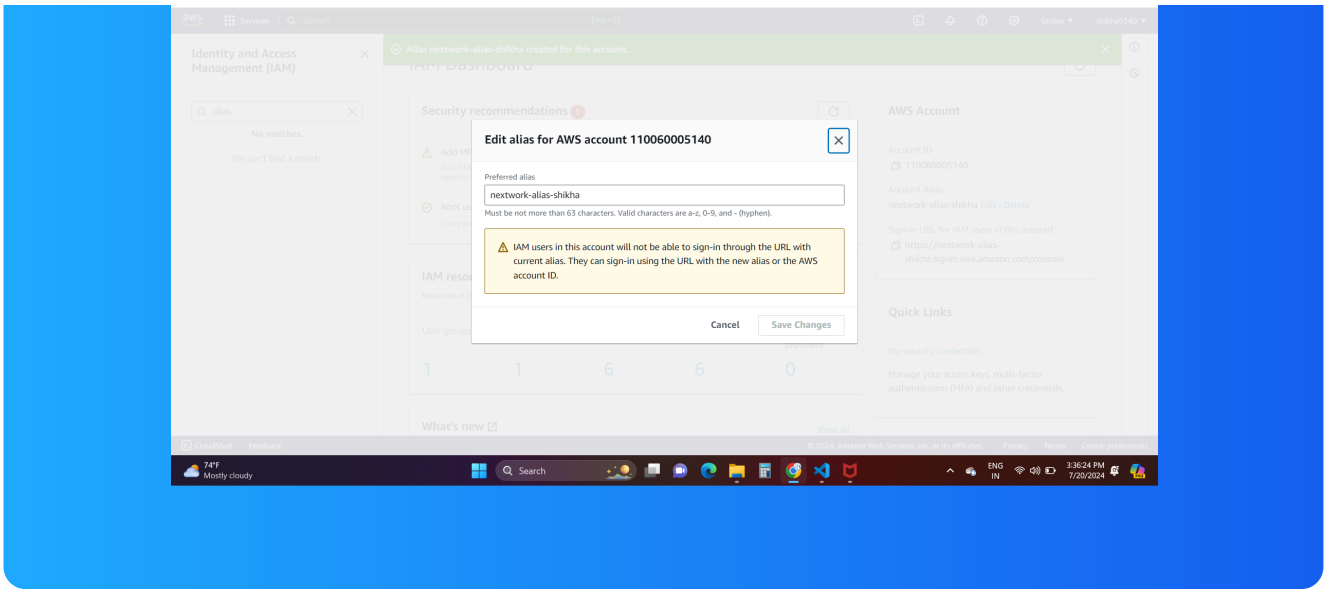
Account Alias

An Account Alias is a friendly name for your AWS account that you can use instead of your account ID (which is usually a bunch of digits) to sign in to the AWS Management Console.

Creating an account alias took me 2 minutes

Now, my new AWS console sign-in URL is https://nextwork-aliasshikha.signin.aws.amazon.com/console





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IAM Users and User Groups

Users

IAM Users are users who can access your resources.

User Groups

I also created a User Group. User Groups are useful for managing multiple IAM users and helps you to manage permissions. If you add the user to the group IAM user can inherit the policies attach to the User Groups.

Attaching a policy to a user group in AWS IAM ensures all members inherit consistent permissions, simplifies management by applying changes universally, and enhances security by enforcing least privilege.

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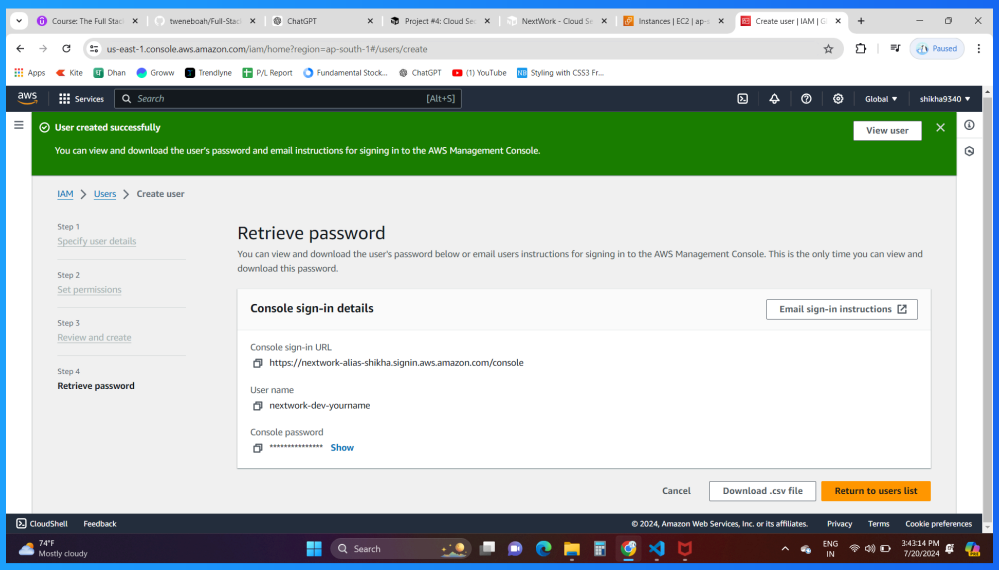
Logging in as an IAM User

You can share a new user's sign-in details in AWS IAM by sending an email invitation with a link for password setup or by manually providing the username and temporary password through secure channels like email or messaging apps.

Once I logged in, I noticed that I didn â t have some permissions that I used to have with my usual login.



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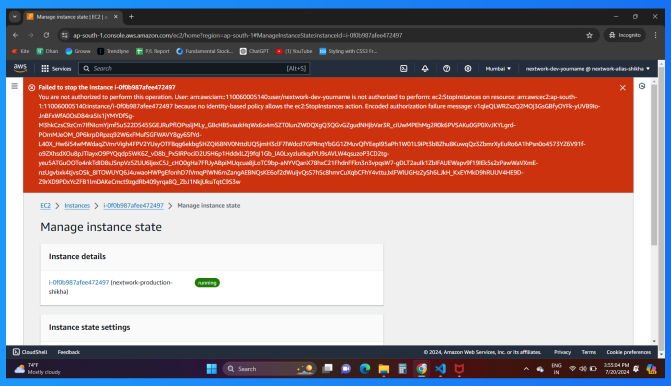
Testing IAM Policies

I tested the JSON IAM policy I set up by stopping the EC2 production instance.

Stopping the production instance

When I tried to stop the production instance, it failed. The message clearly stated that the user was not authorized for this action



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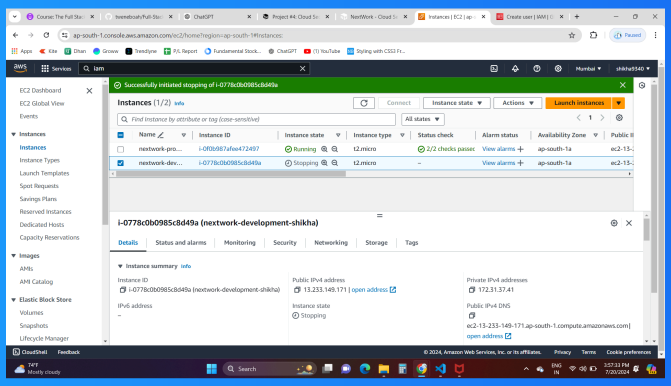
Testing IAM Policies

Stopping the development instance

Next, when I tried to stop the development instance, it stopped. Because we have given permission in policy to such actions with resources tagged as development.



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