Cloud Security with AWS IAM

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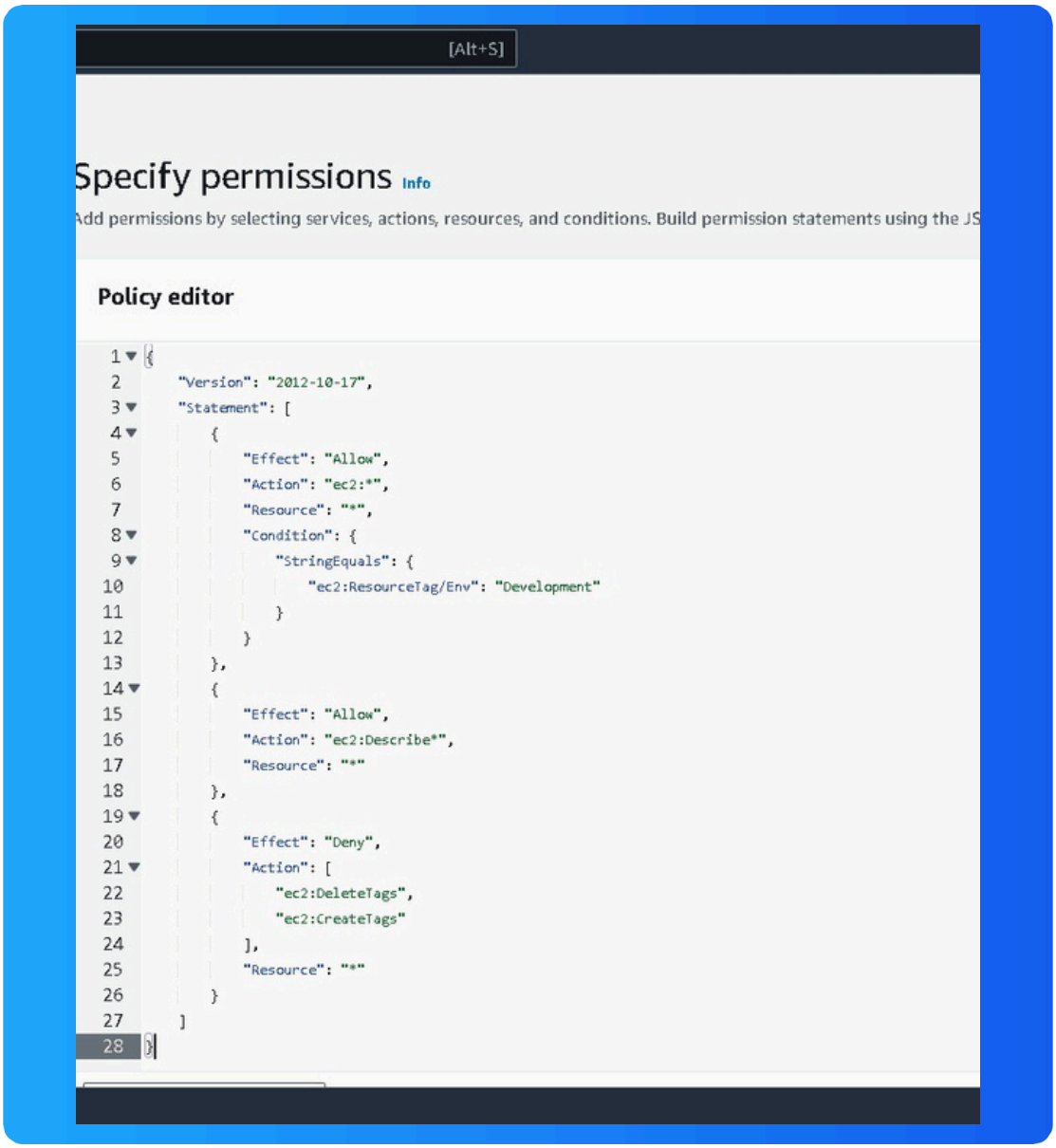

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Introducing today's project!

What is AWS IAM?

Identity &Access Management is a service that helps to manage users, groups, and policies. This ensures a safe practice within the cloud environment, that guarantees no actions or logins are made out of the ordinary.

How I'm using AWS IAM in this project

Iused IAMfor user,user-group,and policy creationwithwhich I tested how policies allow or deny certain actions over the AWS.

One thing I didn't expect...

What amazedme ishow easy itisto manage and ensure user control on the cloud a.w.a how quickly every person with any skill set can learn the cloud and its usage.

This project took me...

This project took me less than 15 minutes.

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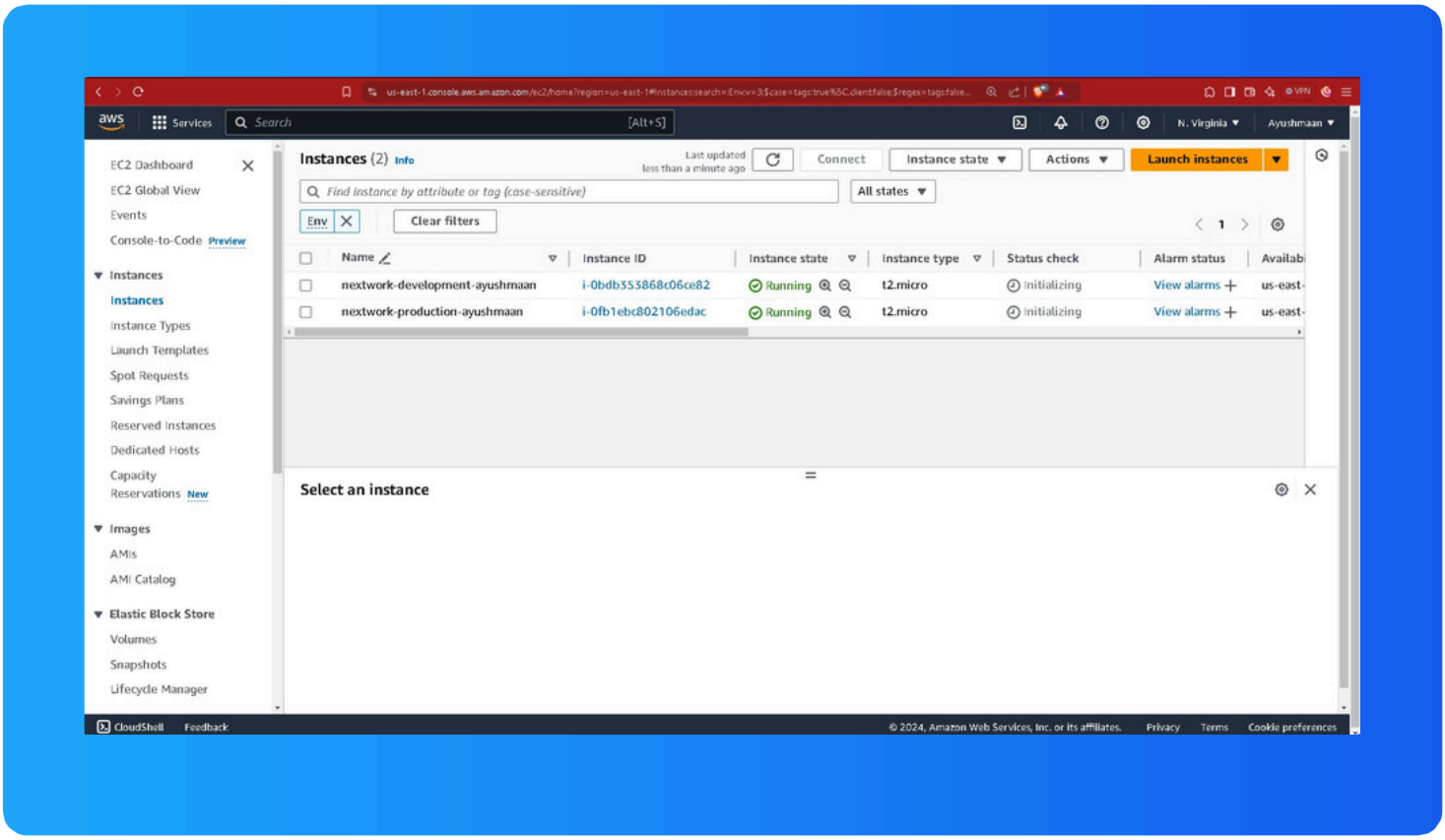
Tags

Labels that can be attached to resources to identify them individually or as a collection. Tagging helps to reduce the complexity of a large architecture by grouping the resources having similar functionalities and performing actions over them.

The tags I've used on my EC2 instances are:

Key: Value
Env: Production
Name: nextwork-production-ayushmaan

Key: Value
Env: Development
Name: nextwork-development-ayushmaan



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IAM Policies

IAM stands for Identity & Access Management which creates, grants or restricts users with permissions to maintain a safe environment. Policies are a set of instructions either "Allowing" or "Denying" a user, group or roles with resource usage.

The policy I set up

To create a custom policy based upon the requirement, I've used the JSON editor to give me more control over my policy permissions.

The policy grants the permission to do everything with the ec2 resource for the tag containing Key: "Env” and Value: "Development". Also allowing permissions to list the details of ec2 simultaneously denying the ability to "create" or "delete" any tag

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

Effect: It reflects two actions either "Allow" or "Deny" the later one has the priority. Actions: "ec2:*" this means everything on ec2 should be allowed. Resource: Which resource does this policy applies to in our case every resource in the scope.

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My JSON Policy

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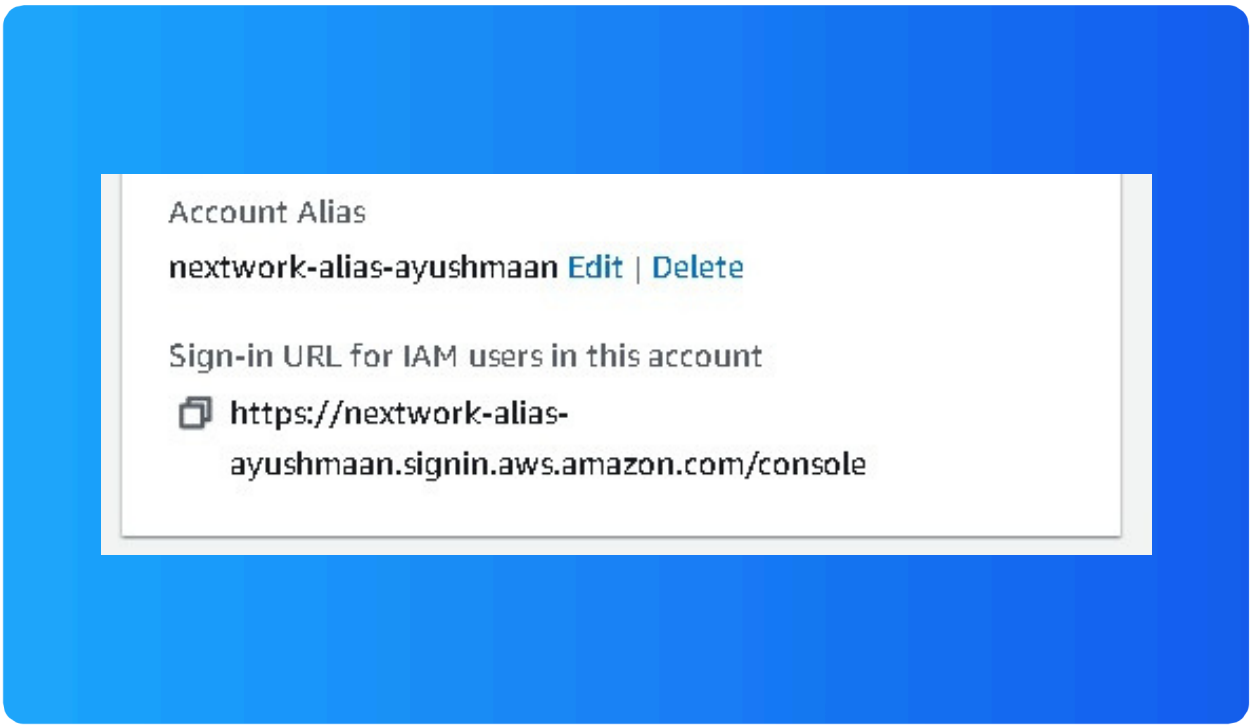
Account Alias

Account Alias is an easy way to remember your AWS account which usually includes the digits, which makes it easy to remember as reliable to customize.

Creating an Alias for my AWS account took me less than 10 seconds.

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



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IAM Users and User Groups

Users

IAM users are the people that get access to our AWS resources.

User Groups

IAM user groups are a collection or folder of IAM users, this helps us to organize various users working on the same project as well as provide the permissions all at one go rather than attaching them individually.

I attached the policy I created to this user group, which means every user that'll be added to this group in the future will have the same permissions and reduces the part where it needs to be attached individually.

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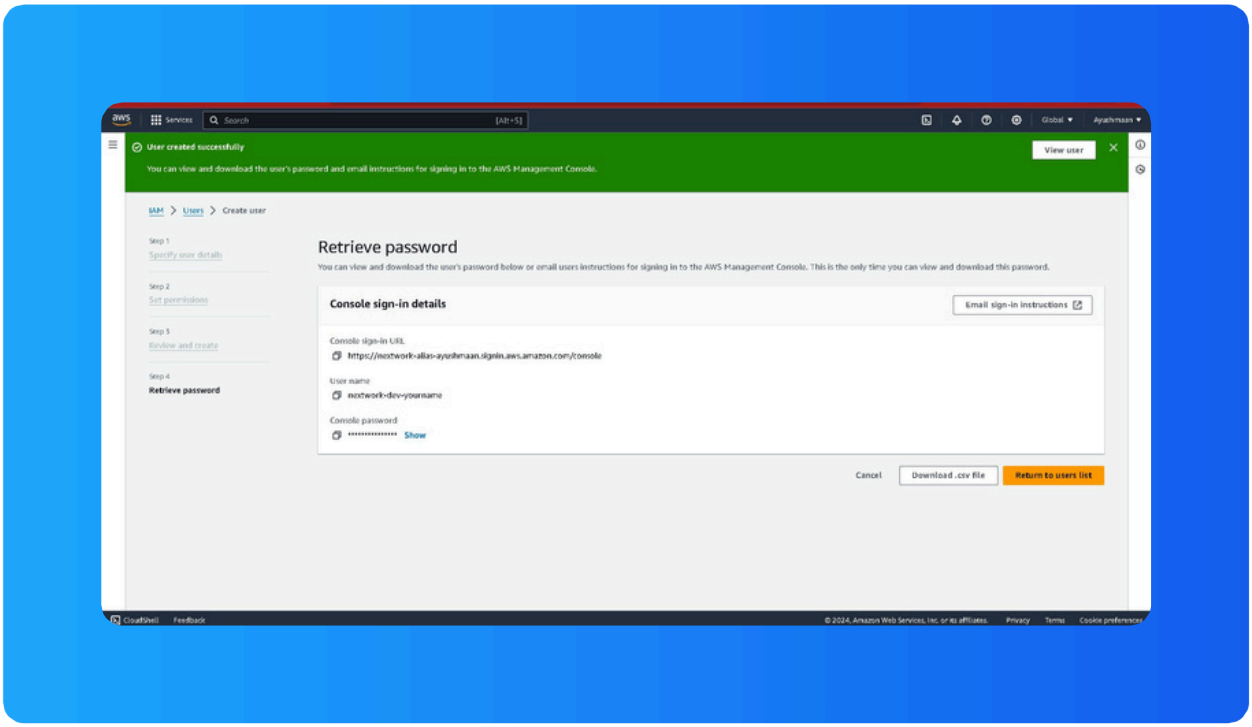
Logging in as an IAM User

The first way is to manually email the credentials and temporary password shown only during the creation of the user, then instruct the user to create a new password during login. The Second way is to send an automated email that guides the user.

Once I logged in as my IAM user, I noticed many inaccessible services.



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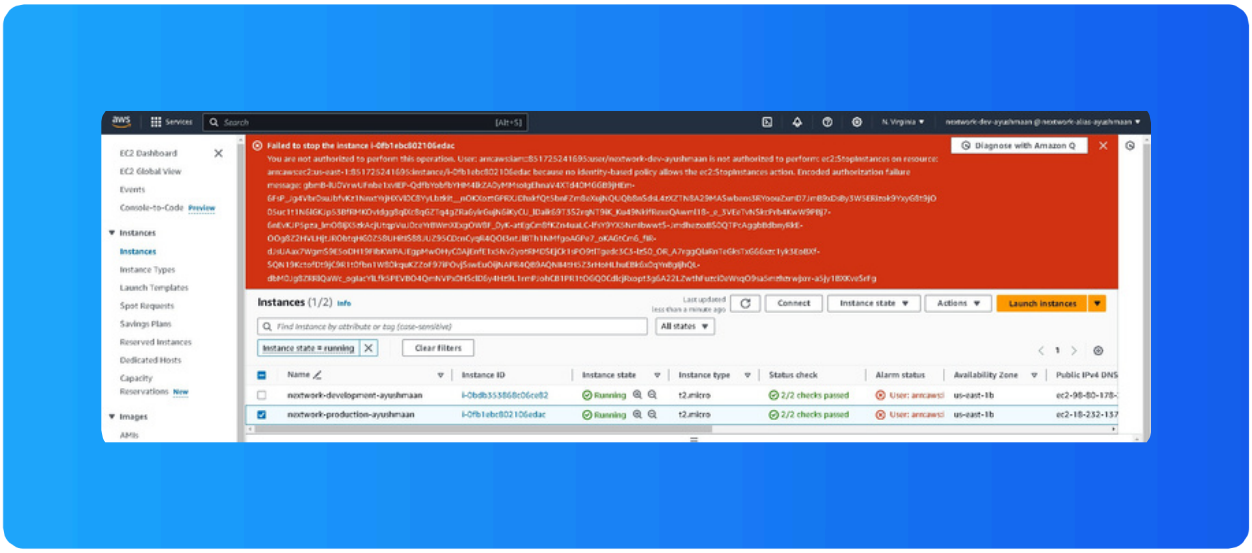
Testing IAM Policies

I tested my JSON IAM policy by stopping the Production Instance and Development Instance.

Stopping the production instance

When I tried to stop the production instance I got the error message stating that I don't have the privilege to stop the instance.



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Testing IAM Policies

Stopping the development instance

Next,when I tried tostop thedevelopment instanceitstopped successfully showing how IAM policies restrict or allow certain actions.