



Cloud Security with AWS IAM



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The screenshot shows the AWS IAM Policy Editor interface. The left pane displays a JSON policy document with numbered lines. The right pane shows a modal window titled "Edit statement" with a "Select a statement" dropdown and a "Add new statement" button.

```
1 v {  
2   "Version": "2012-10-17",  
3   "Statement": [  
4     {  
5       "Effect": "Allow",  
6       "Action": "ec2:Describe*",  
7       "Resource": "*",  
8       "Condition": {  
9         "StringEquals": {  
10           "ec2:ResourceTag/Env": "development"  
11         }  
12       },  
13     },  
14     {  
15       "Effect": "Allow",  
16       "Action": "ec2:Describe*",  
17       "Resource": "*",  
18     },  
19     {  
20       "Effect": "Deny",  
21       "Action": [  
22         "ec2:DeleteTags",  
23         "ec2:CreateTags"  
24       ],  
25       "Resource": "*"  
26     }  
27   ]  
}
```



Introducing today's project!

What is AWS IAM?

IAM is useful for user authentication and authorization

How I'm using AWS IAM in this project

In todays project i have created users and added them into a group and assigned a policy to that group

One thing I didn't expect...

IAM simulation

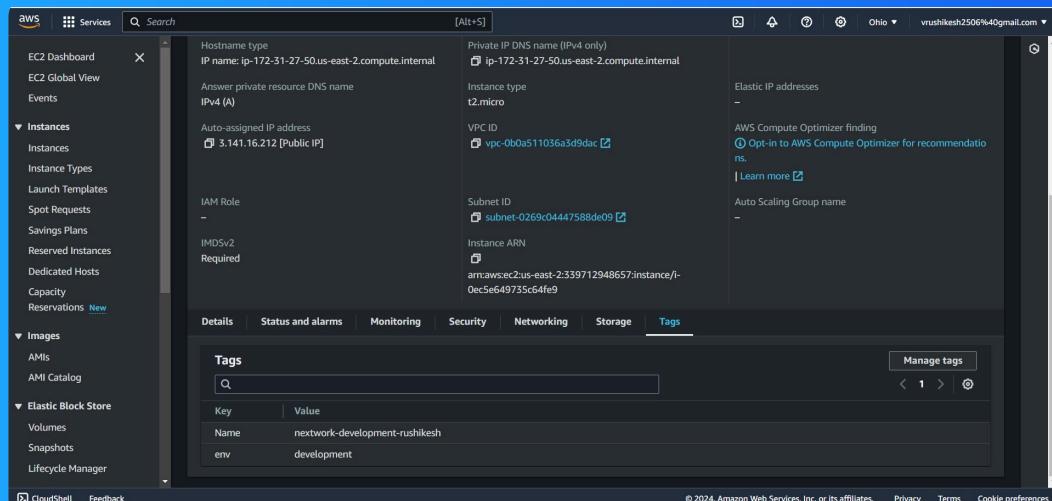
This project took me...

I took less than a hour to finish this project

Tags

Tags are like Labels that can be attached to our resources, These are used to easily identify our resources. For example if we have tens of servers in dev/uat/prod env's, once we tag our servers we can identify them easily to which env it belongs to

The tag I've used on my EC2 instances is called env The values I've assigned for my instances are Development and Production



IAM Policies

IAM Policies are like a set of rules/permissions that can be applied to users. The users will be within in the IAM rule(policy) boundary

The policy I set up

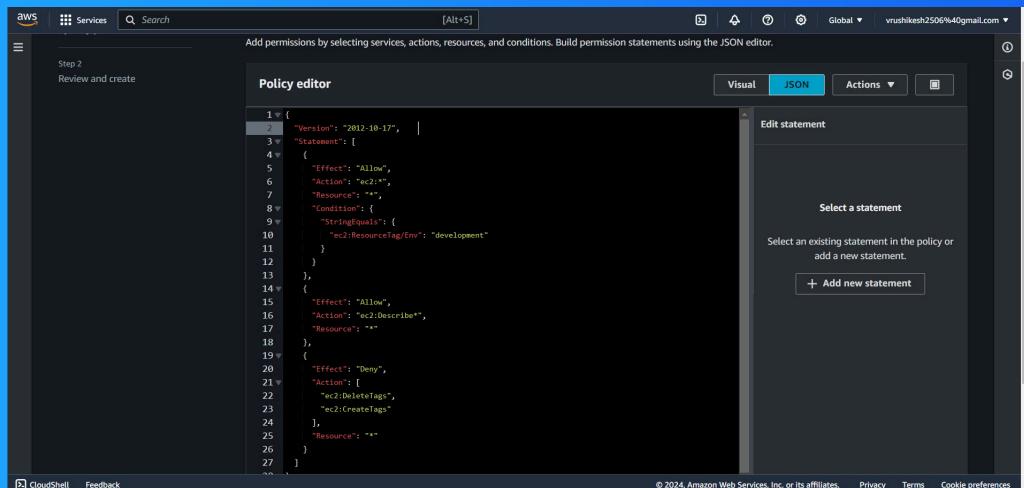
For this project i have used JSON to setup my policy

In this policy there is an action of ec2 allowed for all the instances with the tag as development.

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

Effect can have two values - either Allow or Deny to indicate whether the policy allows or denies a certain action. Deny has priority. Action is A list of the actions that the policy allows or deny Resource are for what does this policy apply to

My JSON Policy



The screenshot shows the AWS IAM Policy Editor in Step 2: Review and create. The policy editor interface has a JSON tab selected. The JSON code is as follows:

```
1 Version: '2012-10-17',
2 Statement: [
3     {
4         Effect: "Allow",
5         Action: "ec2:*",
6         Resource: "*",
7         Condition: {
8             StringEquals: {
9                 "ec2:ResourceTag/Env": "development"
10            }
11        }
12    },
13    {
14        Effect: "Allow",
15        Action: "ec2:Describe",
16        Resource: "*"
17    },
18    {
19        Effect: "Deny",
20        Action: [
21            "ec2:DeleteTags",
22            "ec2:CreateTags"
23        ],
24        Resource: "*"
25    }
26 ]
27 ]
```

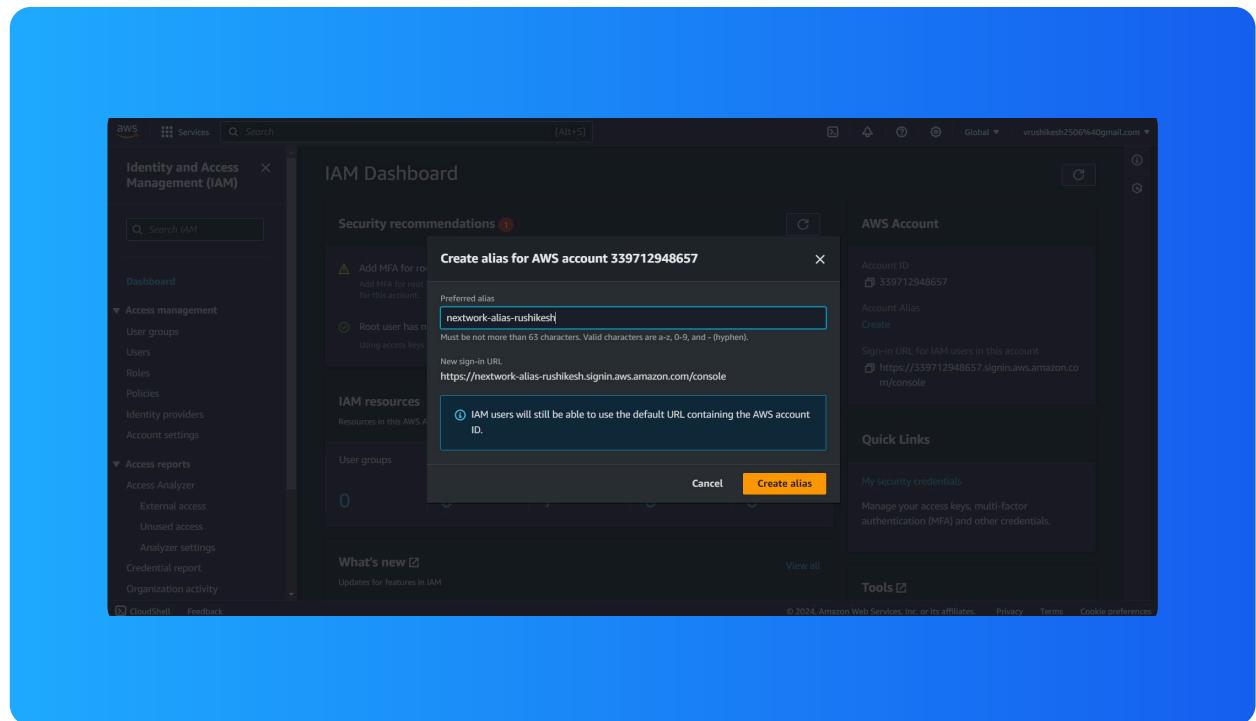
The right side of the interface shows a modal window titled "Edit statement" with the sub-instruction "Select a statement". It contains the text "Select an existing statement in the policy or add a new statement." and a button labeled "+ Add new statement".

Account Alias

Aliasing is giving a new name instead of using the original name

Creating an Account Alias took me less than a minute

<https://nextwork-alias-rushikesh.signin.aws.amazon.com/console> is my signin URL after account Alias





IAM Users and User Groups

Users

IAM users are the people that will get access to your resources/AWS account, whereas user groups are the collections/folders of users for easier user management.

User Groups

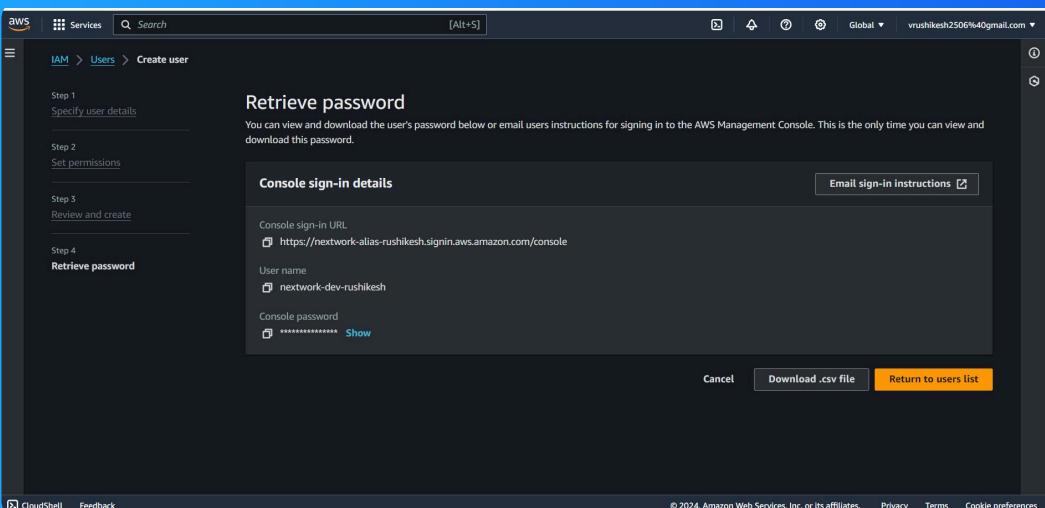
An IAM user group is a collection/folder of IAM users. It allows you to manage permissions for all the users in your group at the same time by attaching policies to the group rather than individual users.

If my user group has 10 users, if i want a policy that has be attached to the users, instead of attaching individually i can do all the 10 users at once by attaching a policy to the group

Logging in as an IAM User

USERNAME PASSWORD

Once I logged in as my IAM user, I noticed it was totally a new one and some access were denied

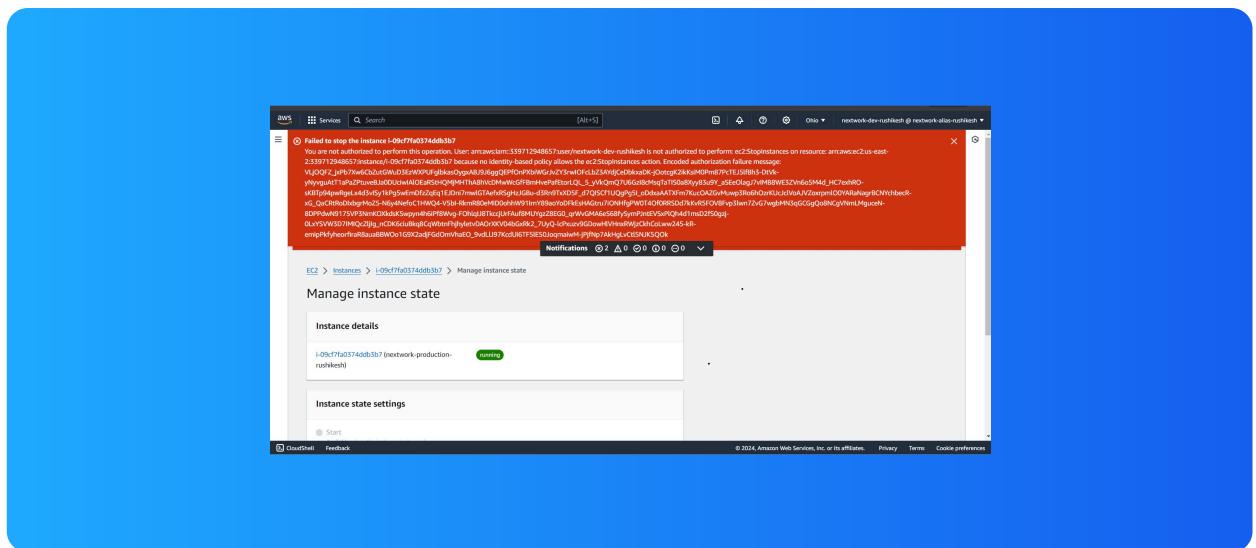


Testing IAM Policies

I tested my JSON IAM policy by stopping the EC2 instance for DEV and Prod instances

Stopping the production instance

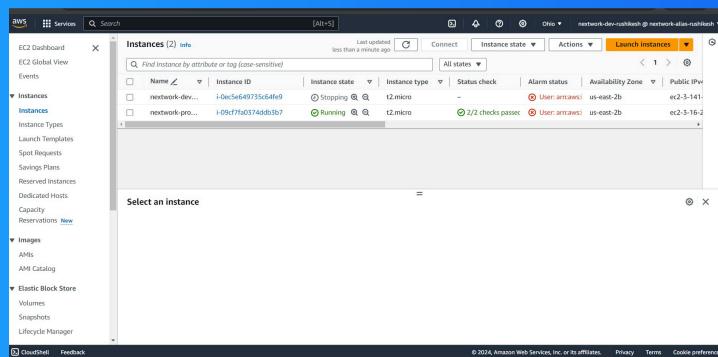
when i tried to stop my production instance it gave me an error saying that i do have access to stop production instance



Testing IAM Policies

Stopping the development instance

when I tried to stop the development instance it stopped successfully since I have the permissions written in the JSON data while creating the IAM user group policy





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