



# Cloud Security with AWS IAM



Sayed Mahmeer Ali Shah

Policy editor

Visual JSON Actions ▾

```
2 "Version": "2012-10-17",
3 "Statement": [
4 {
5     "Effect": "Allow",
6     "Action": "ec2:*",
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 }
```

Edit statement

Select a statement

Select an existing statement in the policy or add a new statement.

+ Add new statement



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# Introducing Today's Project!

In this project, I will demonstrate Cloud Security using AWS IAM. I'm doing this project to learn about cloud security.

## Tools and concepts

Services I used were EC2, and IAM Key concepts I learnt include cloud security, and resource protection using IAM.

## Project reflection

This project took me approximately 50 minutes. The most challenging part was testing the development environment. It was most rewarding to see it done.

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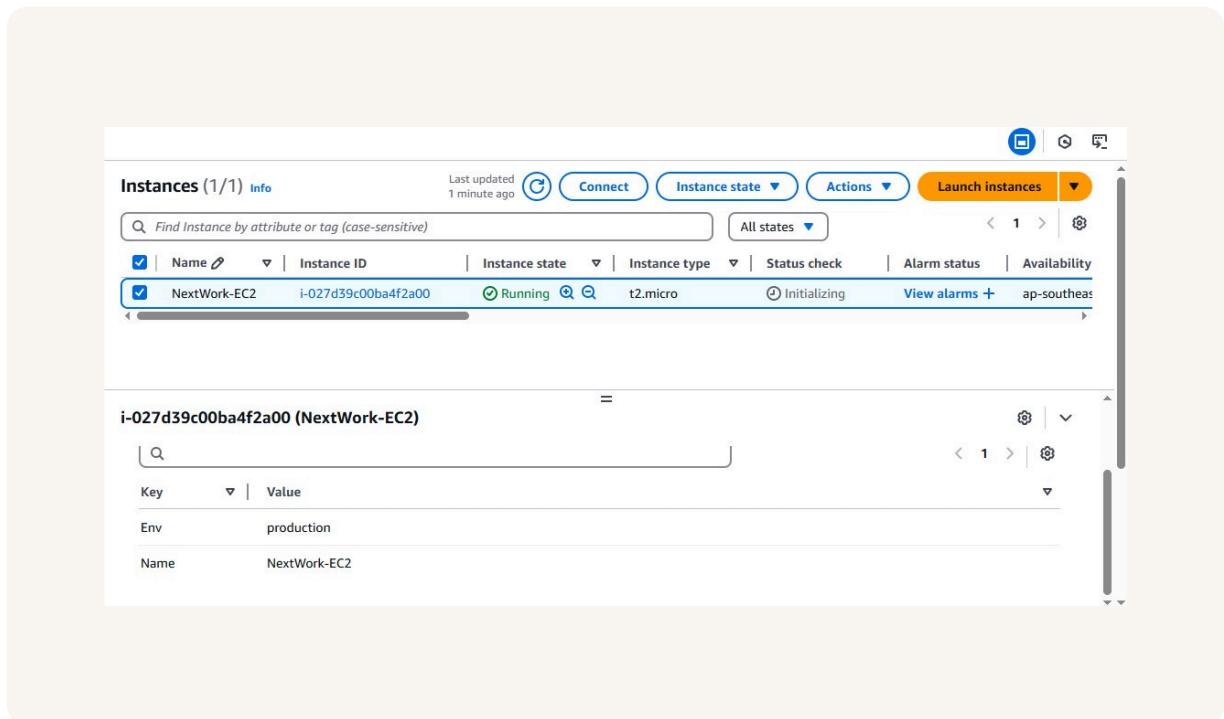
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# Tags

Tags are production and NextWork-EC2. They are useful to identify the purpose the virtual computers or servers are created for.

The tag I've used on my EC2 instances is called Env, Name. The value I've assigned for my instances are production and NextWork-Ec2.



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# IAM Policies

IAM Policies are rules that approve accessibility or denyability of our resources.

## The policy I set up

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

I've created a policy that will allow development easily.

## 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 allow or deny of certian developmnt.

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# My JSON Policy

The screenshot shows the AWS IAM Policy Editor interface. At the top, there are tabs for "Visual", "JSON" (which is selected), and "Actions". Below the tabs, the JSON policy code is displayed:

```
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    }
]
```

To the right of the code editor, there is a sidebar with the title "Edit statement". It contains a section titled "Select a statement" with the sub-instruction "Select an existing statement in the policy or add a new statement." Below this is a button labeled "+ Add new statement".

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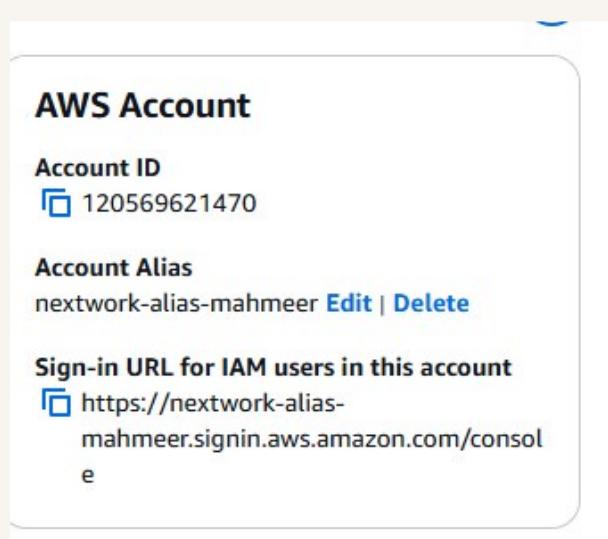
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# Account Alias

An account alias is an easily recognizable, alternate name used to identify an account number for simplified transactions and reporting.

Creating an account alias took me 2 minutes Now, my new AWS console sign-in URL is <https://nextwork-alias-mahmeer.signin.aws.amazon.com/console>



A circular profile picture of a young man with dark hair, wearing a dark suit jacket and a white shirt.

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# IAM Users and User Groups

## Users

IAM users are people who are given certain permission to access the resources.

## User Groups

IAM user groups are the collections/folders of users for easier user management.

I attached the policy I created to this user group, which means I grant them the permissions associated with that group.

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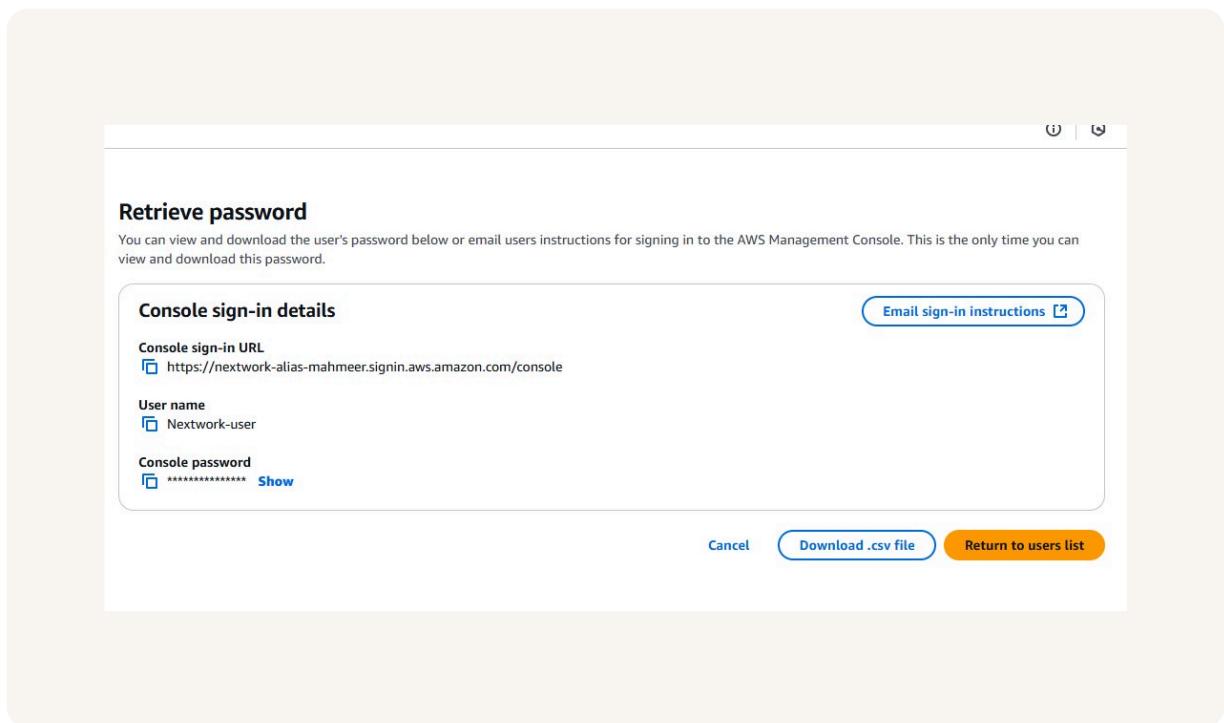
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# Logging in as an IAM User

The first way is to specify user to identity centre, and the second is to create a new IAM user.

Once I logged in as my IAM user, I noticed access was denied. This was because of different region.



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# Testing IAM Policies

I tested my JSON IAM policy by logging in into IAM account.

## Stopping the production instance

I did not get any errors, I successfully changed the status.

Instances (2) <a href="#">Info</a>		Last updated 3 minutes ago	<a href="#">Connect</a>	<a href="#">Instance state ▾</a>	<a href="#">Actions ▾</a>	<a href="#">Launch instances</a>	<a href="#">▼</a>	
				<a href="#">All states ▾</a>				
<input type="checkbox"/>	Name <a href="#">O</a>	Instance ID		Instance state	Instance type	Status check	Alarm status	Availability
<input type="checkbox"/>	nextwork-pro...	i-0a39ef1785b72a9a5		<a href="#">Stopped</a> <a href="#">Q</a> <a href="#">Q</a>	t2.micro	-	<a href="#">View alarms +</a>	ap-southeast-1
<input type="checkbox"/>	nextwork-dev...	i-0229dc58df049d717		<a href="#">Running</a> <a href="#">Q</a> <a href="#">Q</a>	t2.micro	<a href="#">2/2 checks passed</a>	<a href="#">View alarms +</a>	ap-southeast-1

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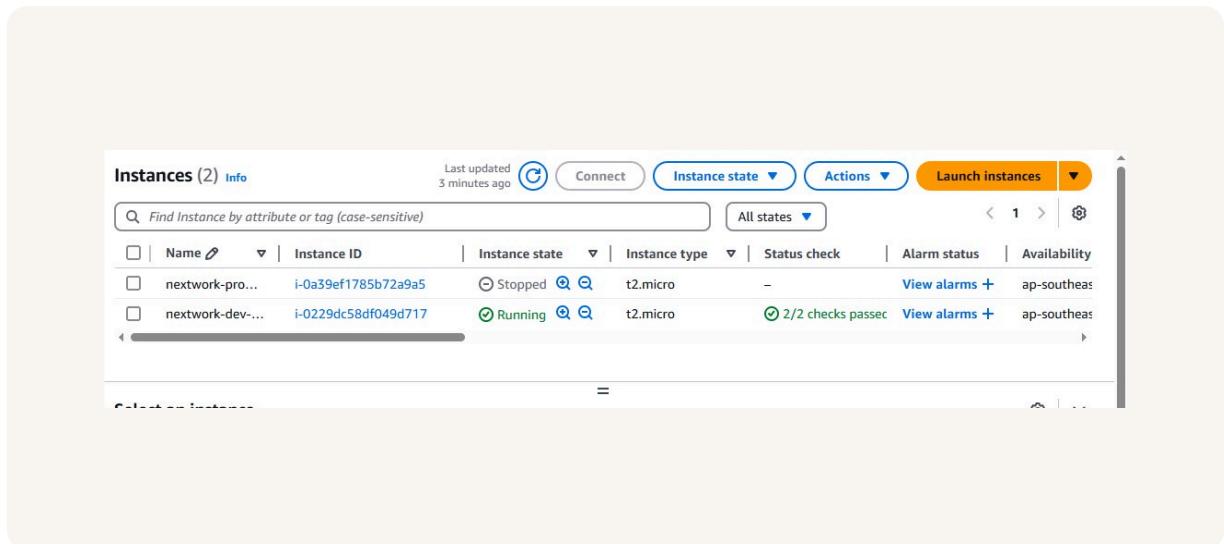
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# Testing IAM Policies

## Stopping the development instance

Next, when I tried to stop the development instance, it gave me an error at first. This was because I selected the wrong instance.





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