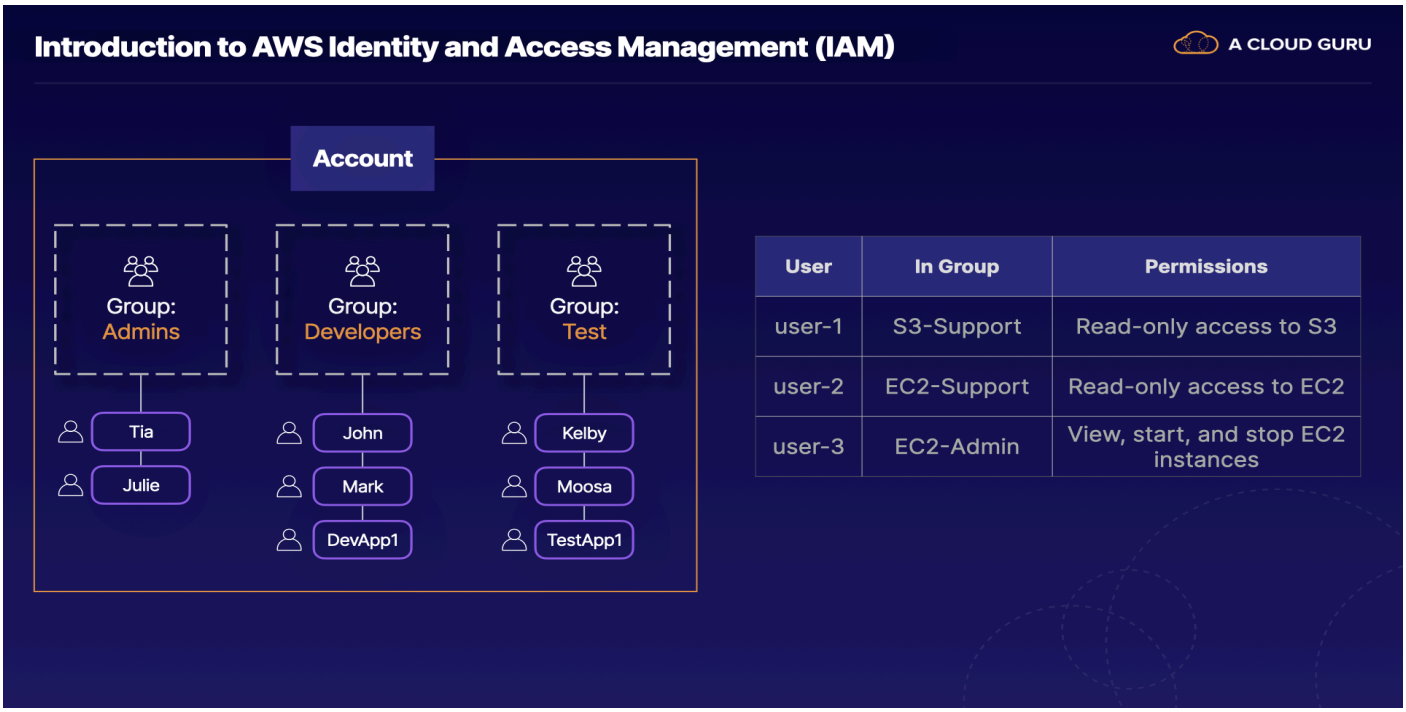
Introduction to AWS Identity and Access Management (IAM)

AWS Identity and Access Management (IAM) is a service that allows AWS customers to manage user access and permissions for their accounts, as well as available APIs/services within AWS. IAM can manage users and security credentials (such as API access keys), and allow users to access AWS resources.

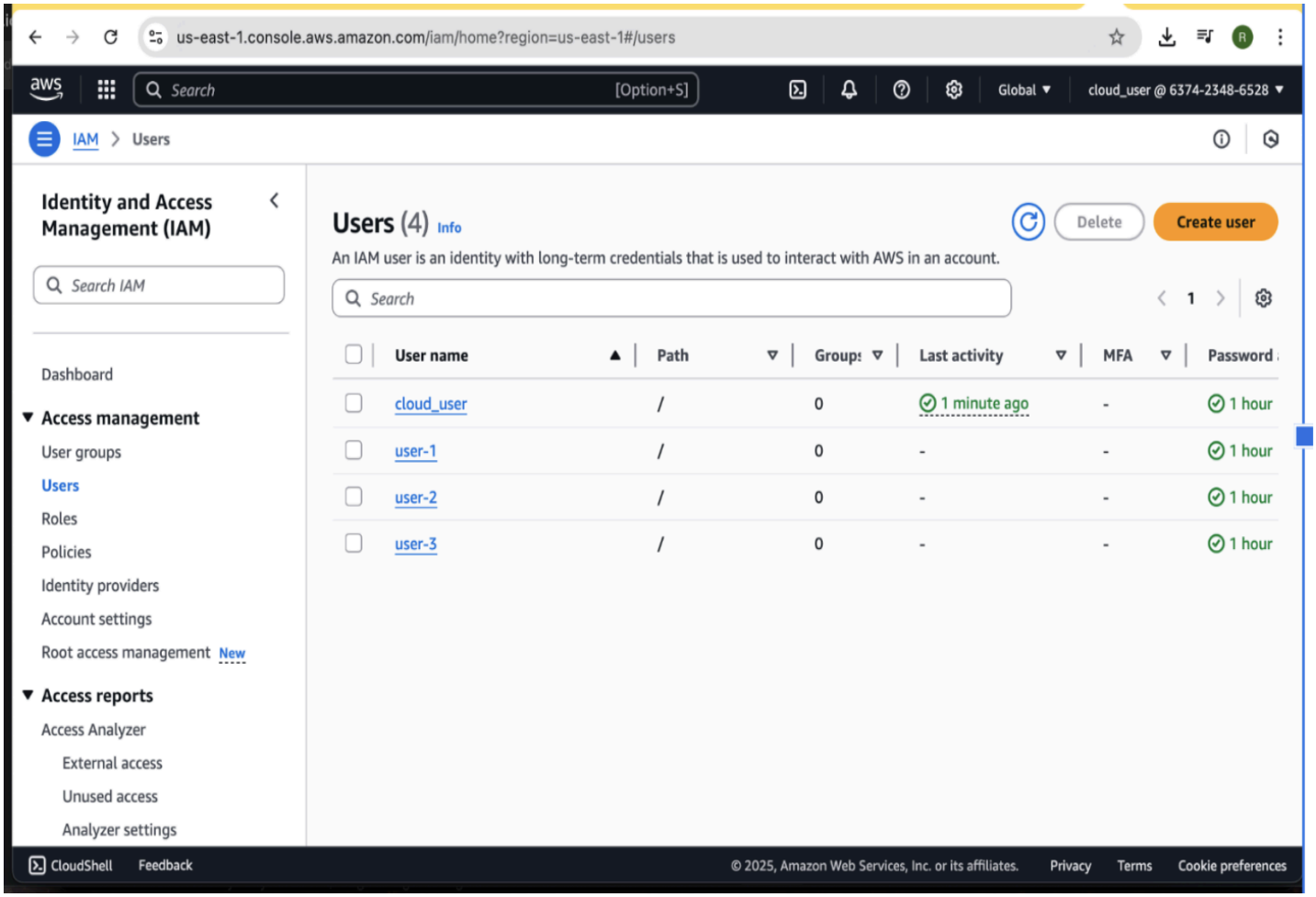
In this lab, we will walk through the foundations of IAM. We'll focus on user and group management, as well as how to assign access to specific resources using IAM-managed policies. We'll learn how to find the login URL, where AWS users can log in to their account, and explore this from a real-world use case perspective.

Lab Diagram



Exploration of User and Group

Explore the users



1. Navigate to IAM
2. In the IAM sidebar menu select users.
3. Select the user-1 user name.
4. Review the resources associated with user-1.

Select the permission and group tab,where you'll user-1 does not have permission assigned and does not belong to any groups.

Select security credentials tab ,where you would see user access keys,SSH public keys and HTTPS get credentials for AWS code commit.

Select the access advisor tab to see which service the user has accessed and when.
At the top of the page summary,observe the users ARN (Amazon Resource Name),Path and creation time.

Explore the Groups

1.In the IAM sidebar menu, select User groups.

You should see three provided user groups for this lab:

EC2-Admin: Provides permissions to view, start, and stop EC2 instances
EC2-Support: Provides read-only access to EC2
S3-Support: Provides read-only access to S3

2.Select the EC2-Admin group name.

3. Review the resources associated with EC2-Admin:

Select the Permissions tab, where you can see that there is an inline policy associated with the group.Click the plus-sign icon to the left of the policy name to view the associated inline policy.

4.Use the breadcrumb navigation along the top of the page to select User groups.

5.Select the EC2-Support group name.

6.Review the resources associated with EC2-Support:

Select the Permissions tab, where you'll see that the group has an AWS managed policy. Click the plus-sign icon to the left of the policy name to view the associated AWS managed policy.

7.Use the breadcrumb navigation along the top of the page to select User groups.

8.Select the S3-Support group name.

9.Review the resources associated with S3-Support:

Select the Permissions tab, where you'll see that the group is only allowed read-only access. Click the plus-sign icon to the left of the policy name to view the associated read-only policy.

Add the Users to the Proper Groups

1.Navigate to IAM.
2.In the IAM sidebar menu, select User groups.
3.Add user-1 to the S3-Support group:

Select the S3-Support group name.
Ensure the Users tab is selected and then click Add users on the right.
From the list of available users, check the checkbox next to user-1.
Click Add users.

4.Use the breadcrumb navigation along the top of the page to select User groups.
5.Add user-2 to the EC2-Support group:

Select the EC2-Support group name.
Ensure the Users tab is selected and then click Add users on the right.
From the list of available users, check the checkbox next to user-2.
Click Add users.

6.Use the breadcrumb navigation along the top of the page to select User groups.

7.Add user-3 to the EC2-Admin group:
Select the EC2-Admin group name.
Ensure the Users tab is selected and then click Add users on the right.
From the list of available users, check the checkbox next to user-3.
Click Add users.

8.In the IAM sidebar menu, select Users.

9.Review the permissions for user-3:

- ➔ Select the user-3 user name.
- ➔ Select the Permissions tab and then click the plus-sign icon to expand the customer inline policy associated with user-3.
- ➔ On the right, click Edit.
- ➔ Select the JSON tab and review the policy permissions, but do not make any changes.
- ➔ Close this tab.

Use the IAM Sign-In Link to Sign In as Each User

Sign In as user-1

1.In the IAM sidebar menu, select Dashboard.

2.In the AWS Account section on the right, copy the sign-in URL.

3.In a new browser tab, navigate to the URL.

4.Log in to the AWS Management Console as user-1 using the password provided in the lab's resources.

Remember that this user only has read-only access to S3.

5.Navigate to S3.

6.On the right, click Create bucket.

7.In the Bucket name field, enter a globally unique bucket name (e.g., mycoolS3bucket393874).

8.Leave all other default settings and click Create bucket.

You should receive an Access Denied error, indicating that your group policy is in effect.

9. Navigate to EC2.

You should see a number of API errors, indicating that you do not have access to EC2.

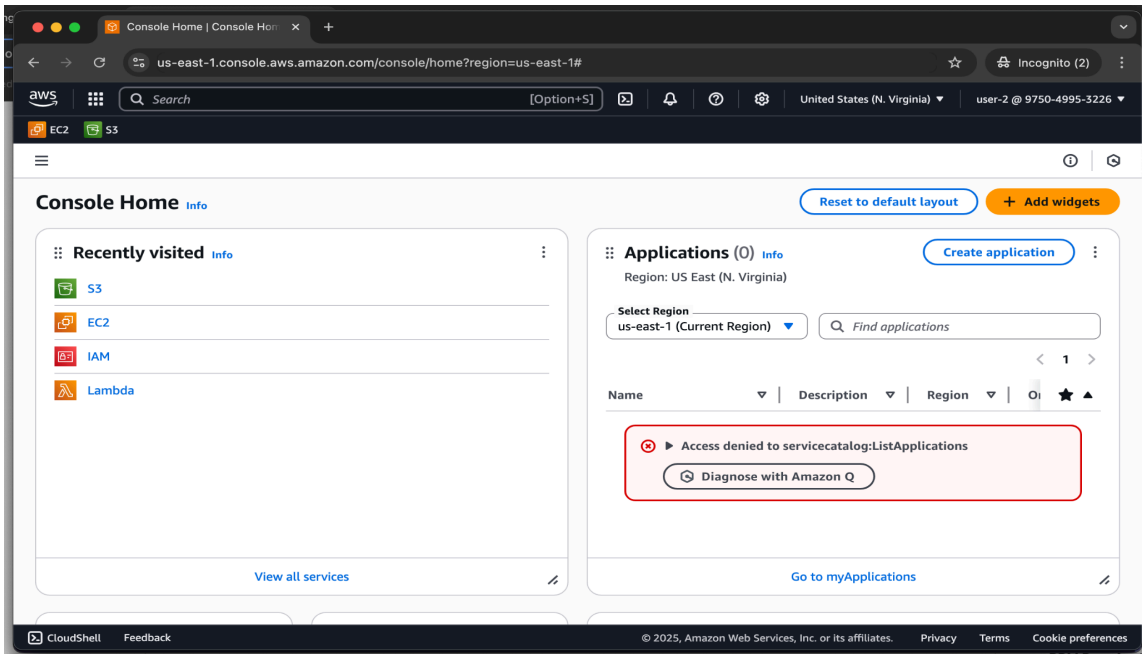
10.In the top right corner of the page, expand the user-1 dropdown menu.

11. Copy the Account ID and then click Sign out.

Sign In as user-2

1.Click Log back in and then paste your copied account ID in the Account ID field.

2.Log in to the AWS Management Console as user-2 using the password provided in the lab's resources.Remember that this user only has read-only access to EC2.

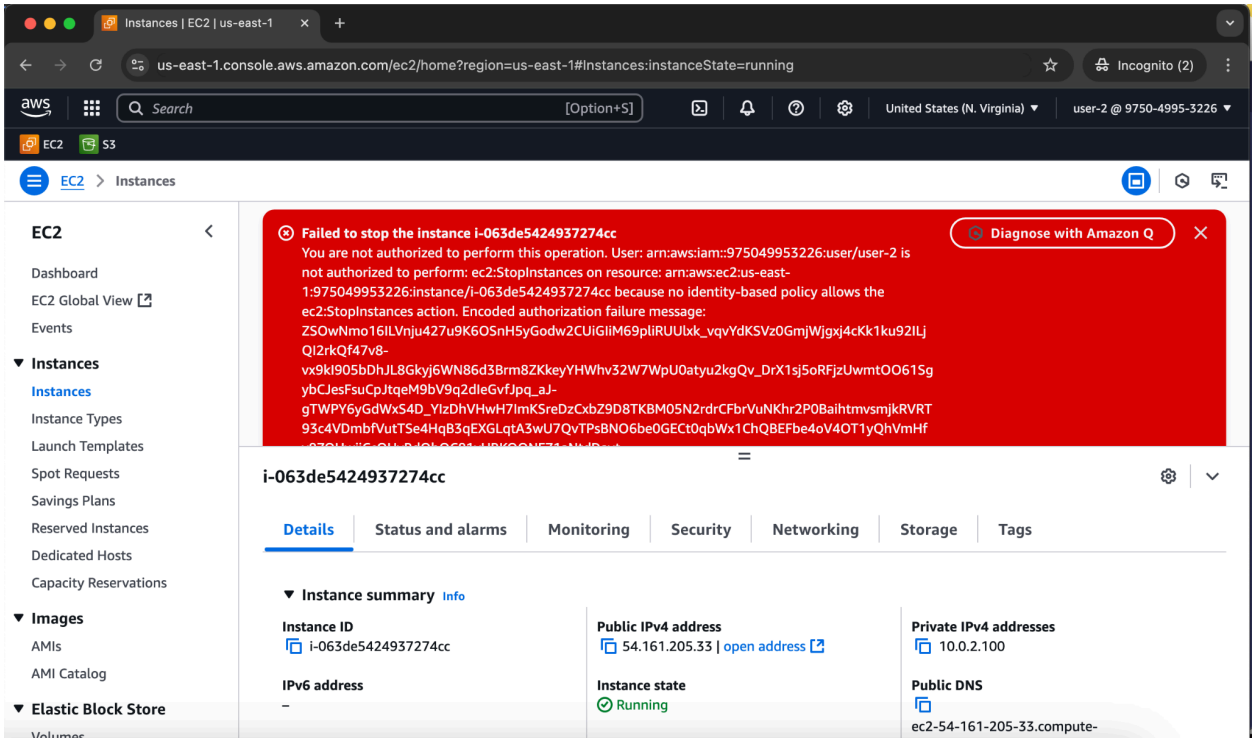


3.Navigate to EC2.

4.From the Resources section in the main pane, select Instances (running).

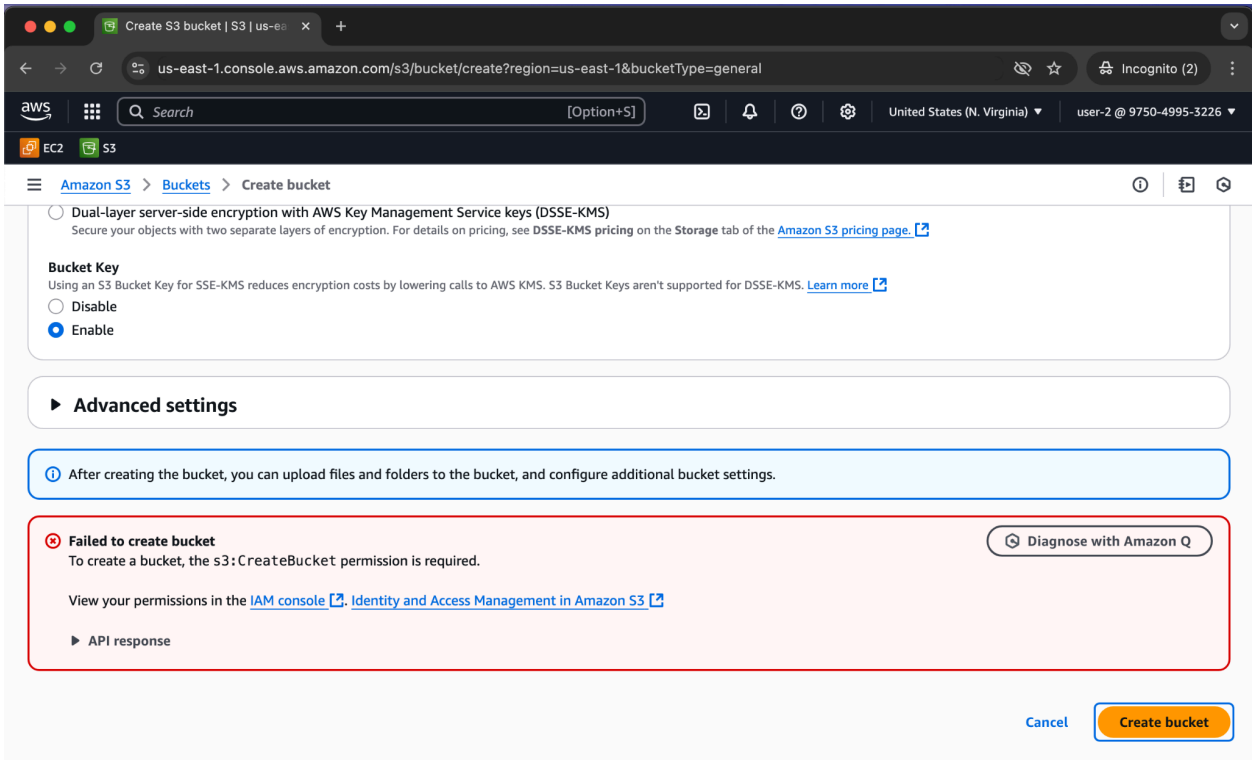
5.Check the checkbox to the left of the running instance and review the instance details.

6.Along at the top of the page, use the Instance state dropdown to select Stop instance, and then click Stop.You should see an error message, since this user doesn't have the permissions to stop instances.



7.Navigate to S3.

You should see that S3 is unavailable for user-2 because this user doesn't have any permissions outside of EC2.



8.In the top-right corner of the page, expand the user-2 dropdown menu.

9. Copy the Account ID and then click Sign out.

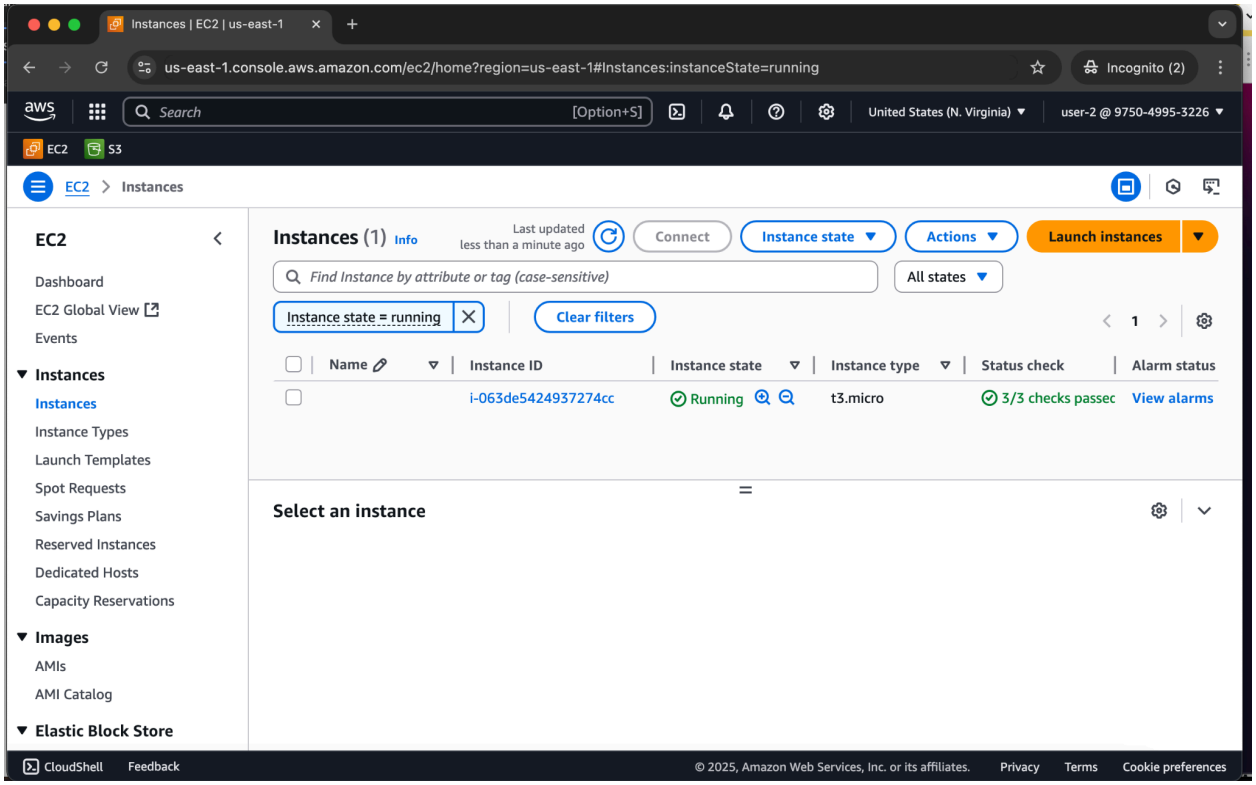
Sign In as user-3

1.Click Log back in and then paste your copied account ID in the Account ID field.

2.Log in to the AWS Management Console as user-3 using the password provided in the lab's resources.Remember that this user can view, start, and stop EC2 instances.

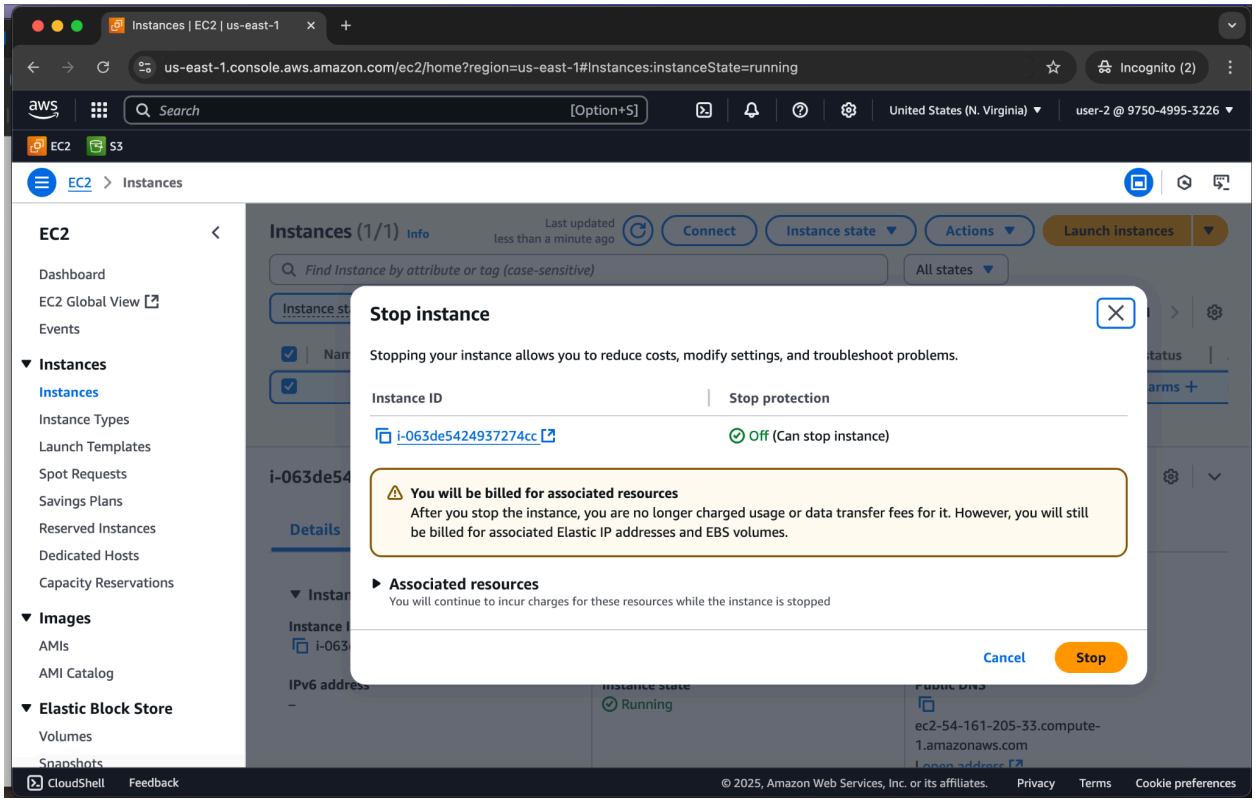
3. Navigate to EC2.

4.From the Resources section in the main pane, select Instances (running).



5.Check the checkbox to the left of the running instance.

6.Use the Instance state dropdown to select Stop instance, and then click Stop.



7.After a minute, refresh the instances page to verify the instance is now in a Stopped state

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