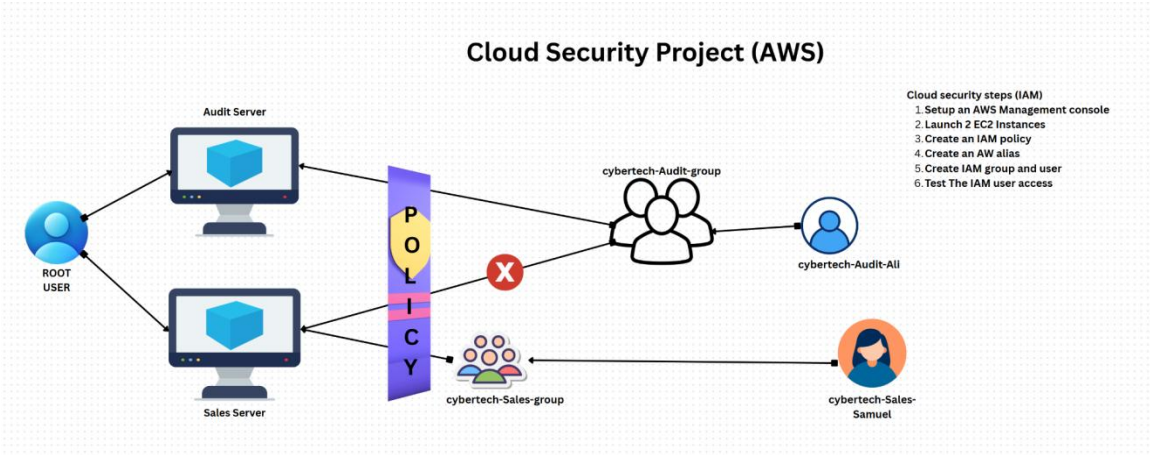
AWS IAM Cloud Security Project

1. Project Overview

I completed this project on cloud security controls in Amazon Web Services (AWS), focusing on Identity and Access Management (IAM). The goal was to create a least- privilege policy, attach it to a user group, and verify that the policy correctly restricts actions on two Amazon EC2 instances (audit and sales).

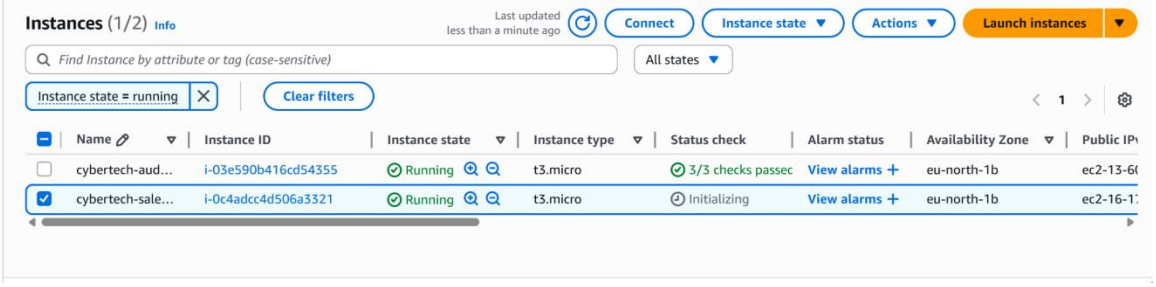


2. Tools & Concepts

- AWS IAM – users, groups, policies, account alias
- Amazon EC2 – instance tagging and lifecycle actions
- JSON policy syntax – Effect, Action, Resource
- Principle of least privilege and policy testing

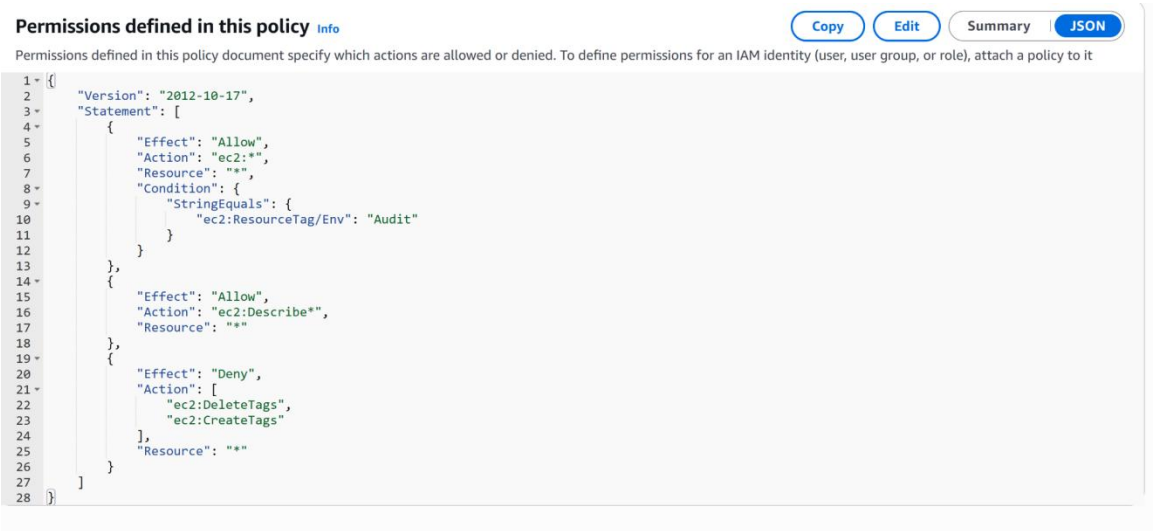
3. Tagging Strategy

I applied a descriptive tag to each EC2 instance:
Instance | Tag Key | Tag Value
audit | Environment | Audit
sales | Environment | Sales



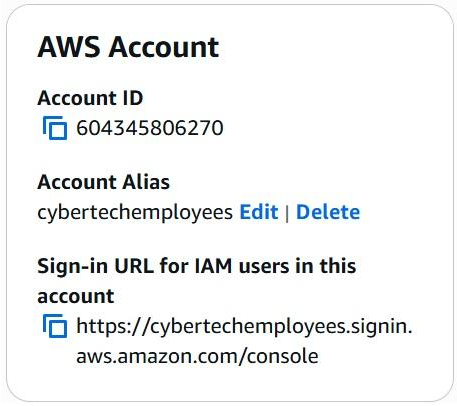
4. Creating the IAM Policy

I authored the following JSON policy to block instance stop/start actions on the audit server but allow those actions on the sales server:



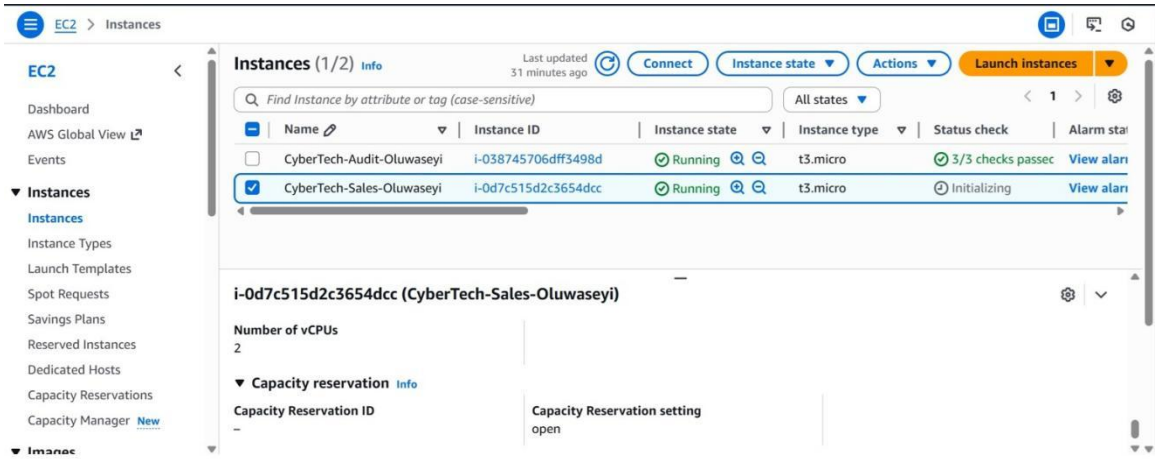
5. Account Alias

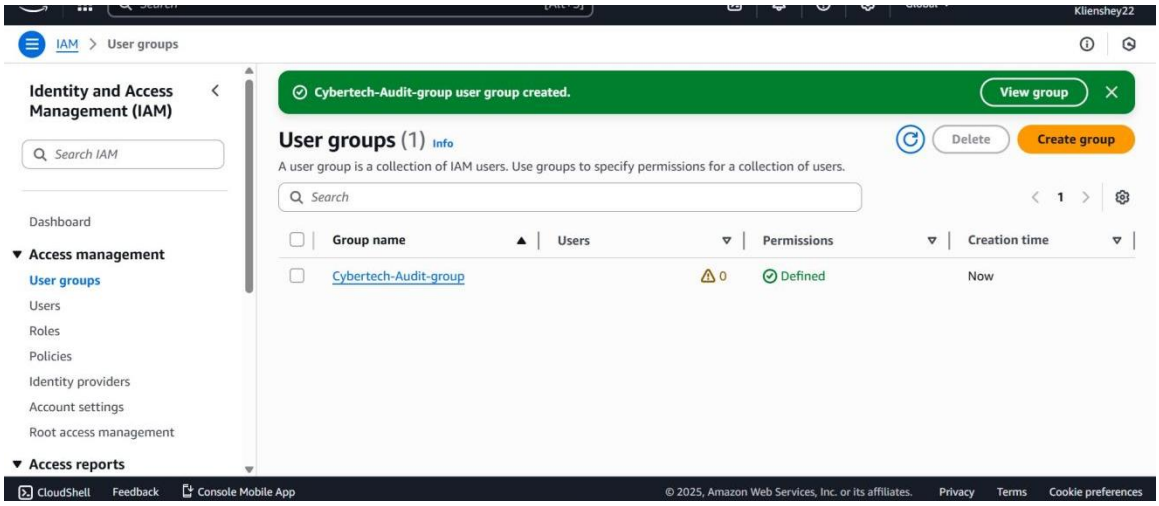
I set a memorable account alias to replace the default numeric URL, making sign- in easier for team members.

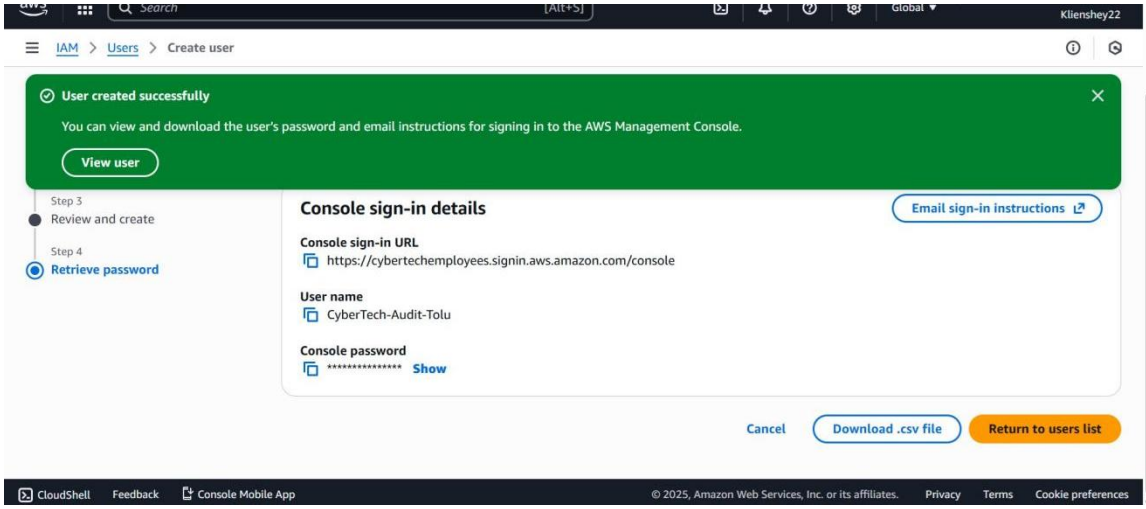


6. IAM Users & Groups

1. Created an IAM user group called Cybertech-Audit-group.
2. Attached the **CybertechAuditEnvPolicy** policy to the group.
3. Added individual IAM users who require controlled EC2 access.





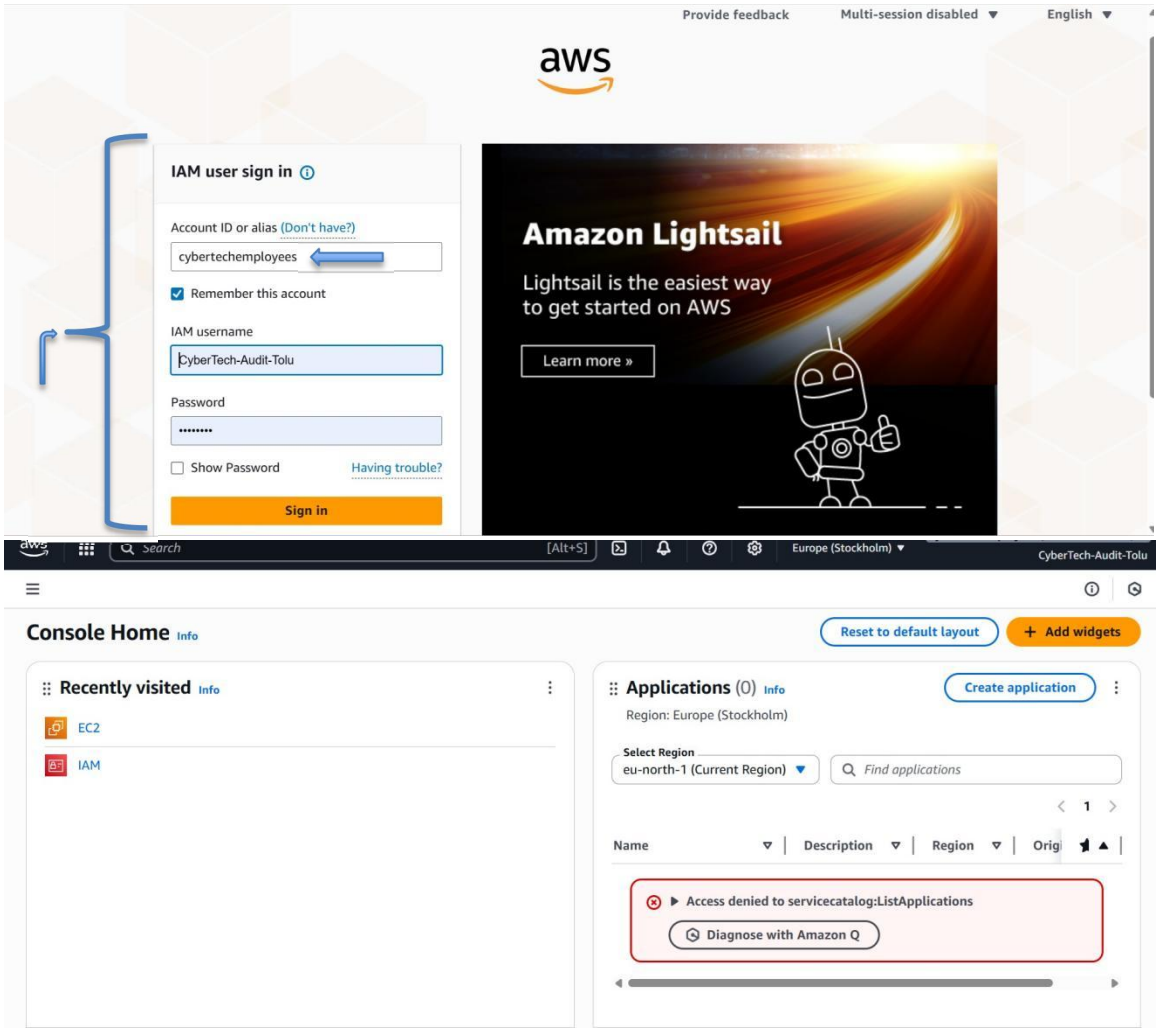


7. Logging in as an IAM User

IAM users can sign in through:

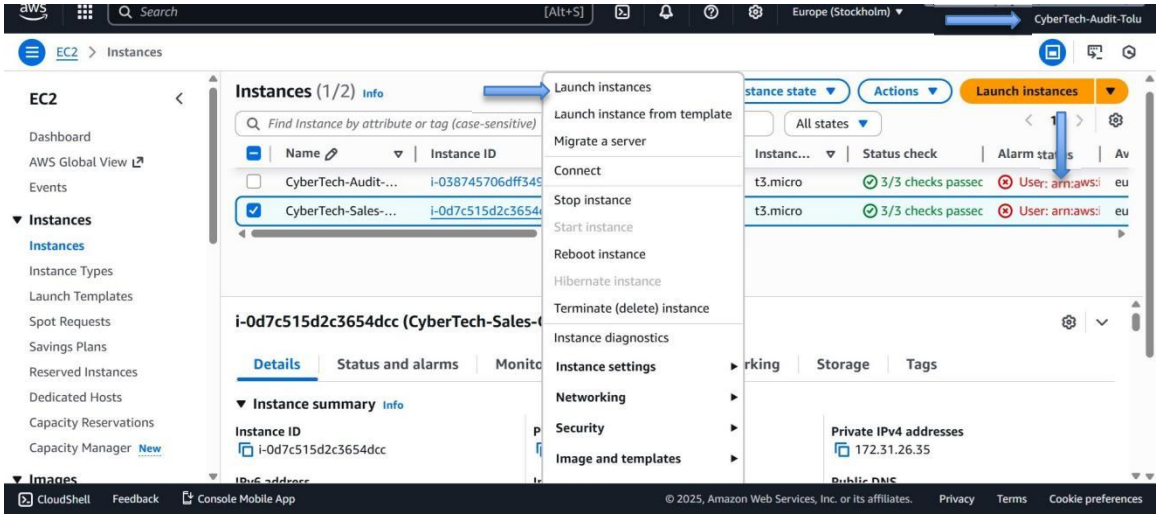
- AWS Management Console (using the new alias URL)

- AWS CLI via programmatic keys



8. Testing the Policy

Test Action | Expected Result | Actual Result
Stop audit instance | Denied | Access denied error displayed
Stop sales instance | Allowed | Instance stopped successfully
Start audit instance | Denied | Access denied error displayed
Start sales instance | Allowed | Instance started successfully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Europe (Stockholm)
CyberTech-Audit-Tolu
EC2 > Instances
EC2
Dashboard
AWS Global View
Events
Instances
Instances
Instance Types
Launch Templates
Spot Requests
Savings Plans
Reserved Instances
Dedicated Hosts
Capacity Reservations
Capacity Manager New
Images
Instances (1/2) Info
Find Instance by attribute or tag (case-sensitive)
Name
Instance ID
CyberTech-Audit-...
i-038745706dff349
CyberTech-Sales-...
i-0d7c515d2c3654
Launch instances
Launch instance from template
Migrate a server
Connect
Stop instance
Start instance
Reboot instance
Hibernate instance
Terminate (delete) instance
Instance diagnostics
Instance settings
Networking
Security
Image and templates
Actions
Launch instances
All states
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Status check
Alarm status
t3.micro
3/3 checks passec
User: arn:aws:i
i-0d7c515d2c3654dcc (CyberTech-Sales-
Details
Status and alarms
Storage
Tags
Instance summary Info
Instance ID
i-0d7c515d2c3654dcc
Private IPv4 addresses
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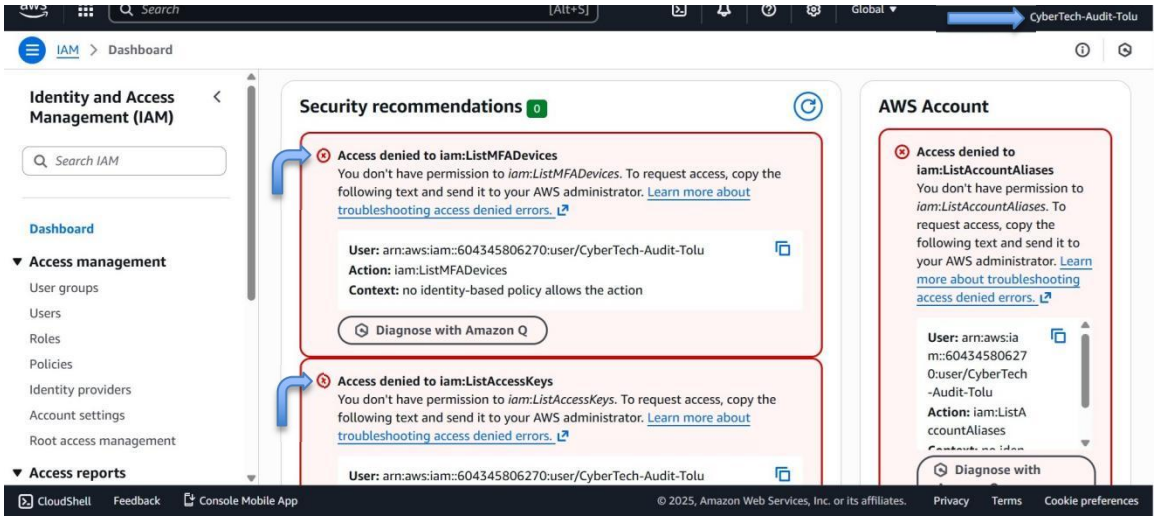
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IAM > Dashboard
Identity and Access Management (IAM)
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Dashboard
Access management
User groups
Users
Roles
Policies
Identity providers
Account settings
Root access management
Access reports
Security recommendations 0
Access denied to iam:ListMFADevices
You don't have permission to iam:ListMFADevices. To request access, copy the following text and send it to your AWS administrator. Learn more about troubleshooting access denied errors.
User: arn:aws:iam::604345806270:user/CyberTech-Audit-Tolu
Action: iam:ListMFADevices
Context: no identity-based policy allows the action
Diagnose with Amazon Q
Access denied to iam:ListAccessKeys
You don't have permission to iam:ListAccessKeys. To request access, copy the following text and send it to your AWS administrator. Learn more about troubleshooting access denied errors.
User: arn:aws:iam::604345806270:user/CyberTech-Audit-Tolu
AWS Account
Access denied to iam:ListAccountAliases
You don't have permission to iam:ListAccountAliases. To request access, copy the following text and send it to your AWS administrator. Learn more about troubleshooting access denied errors.
User: arn:aws:iam::604345806270:user/CyberTech-Audit-Tolu
Action: iam:ListAccountAliases
Diagnose with
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Feedback
Console Mobile App
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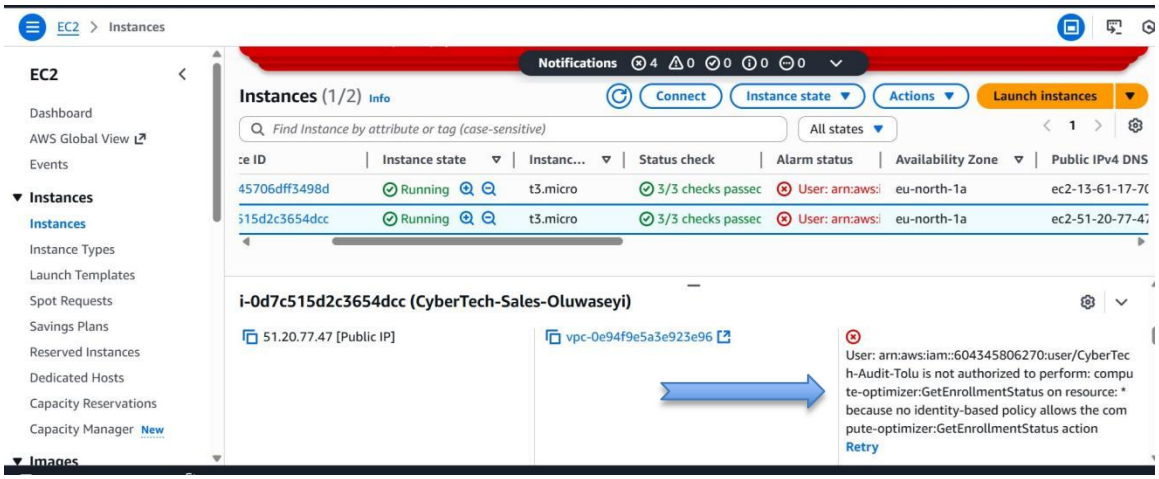
EC2 > Instances
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Instances
Instances
Instance Types
Launch Templates
Spot Requests
Savings Plans
Reserved Instances
Dedicated Hosts
Capacity Reservations
Capacity Manager New
Images
Notifications 4 0 0 0 0
Instances (1/2) Info
Connect
Instance state
Actions
Launch instances
Find Instance by attribute or tag (case-sensitive)
All states
ce ID
Instance state
Instanc...
Status check
Alarm status
Availability Zone
Public IPv4 DNS
45706dff3498d
Running
t3.micro
3/3 checks passec
User: arn:aws:i
eu-north-1a
ec2-13-61-17-7(
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Running
t3.micro
3/3 checks passec
User: arn:aws:i
eu-north-1a
ec2-51-20-77-47
i-0d7c515d2c3654dcc (CyberTech-Sales-Oluwaseyi)
51.20.77.47 [Public IP]
vpc-0e94f9e5a3e923e96
User: arn:aws:iam::604345806270:user/CyberTech-Audit-Tolu is not authorized to perform: compute-optimizer:GetEnrollmentStatus on resource: * because no identity-based policy allows the compute-optimizer:GetEnrollmentStatus action
Retry