St. JOSEPH'S GROUP OF INSTITUTIONS
OMR, CHENNAI - 119

# Placement Empowerment Program

## *Cloud Computing and DevOps Centre*

## Setting Up IAM Roles and Permissions for a Virtual Machine



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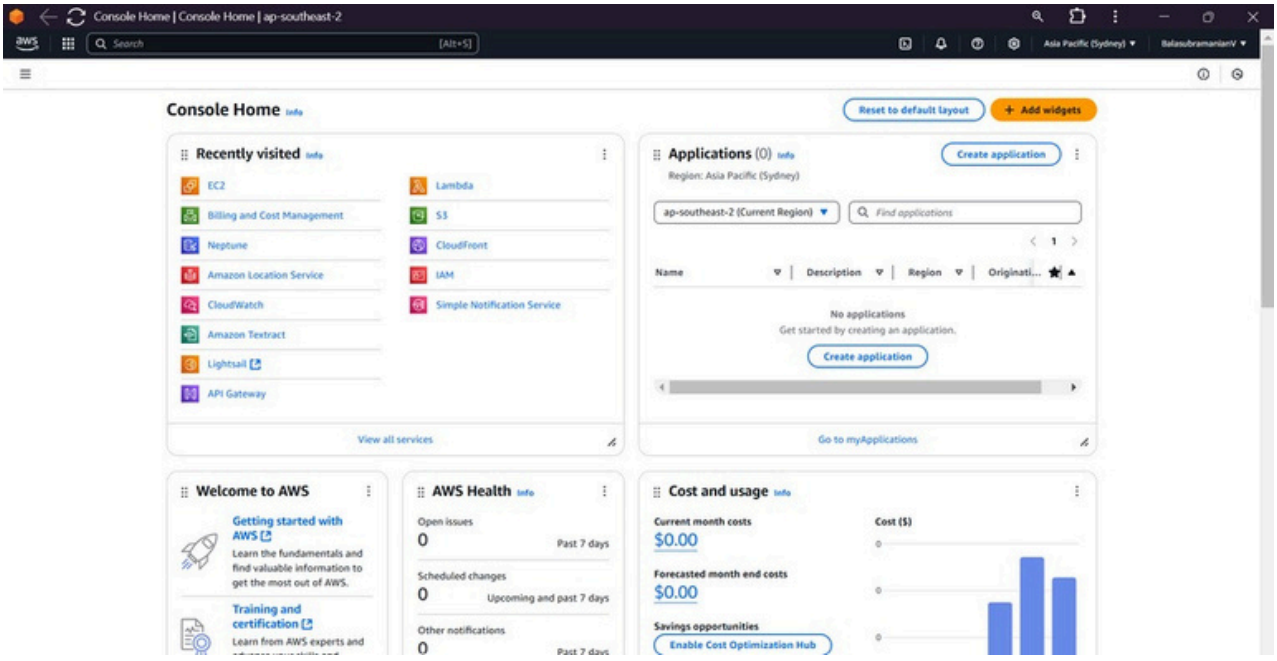
AUTONOMOUS INSTITUTIONS, AFFILIATED TO ANNA UNIVERSITY

# Introduction

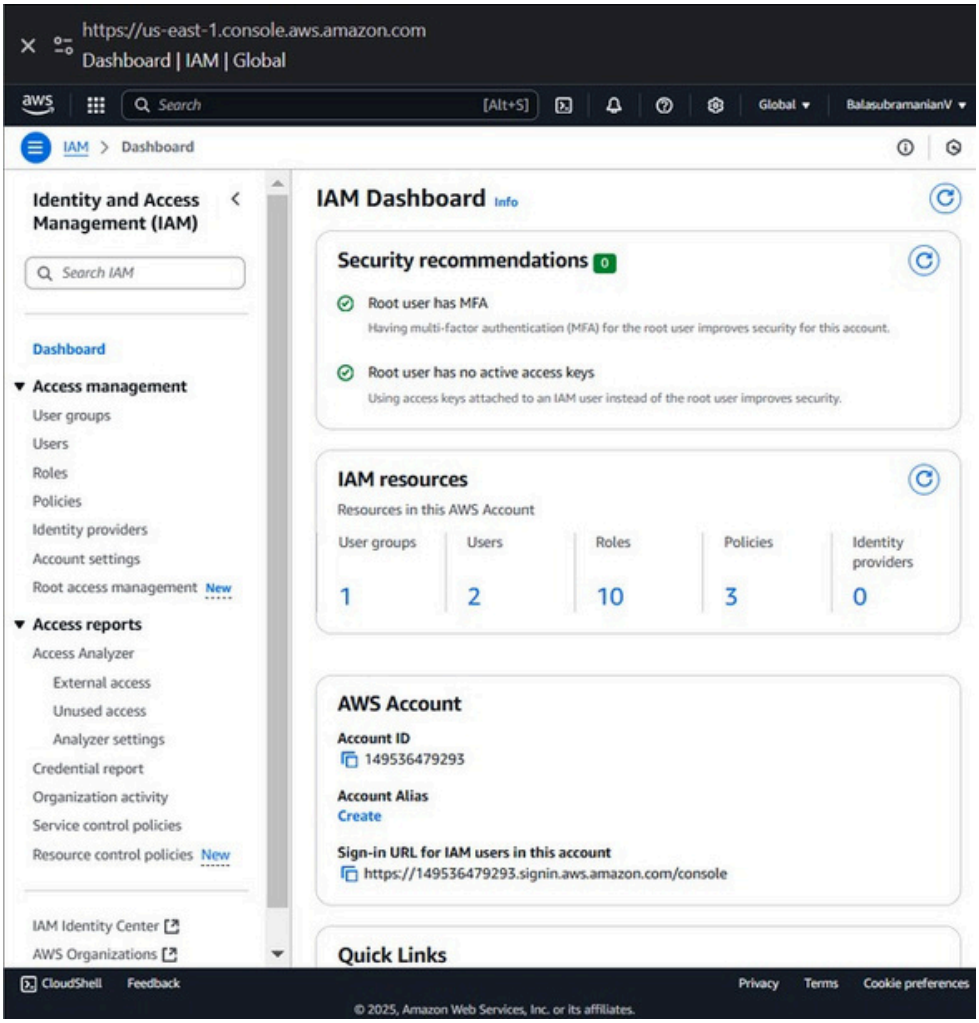
Identity and Access Management (IAM) is a crucial aspect of cloud security that allows administrators to control who can access specific resources and what actions they can perform. By setting up IAM roles and permissions, you ensure that only authorized users or services can interact with your virtual machine (VM). This guide provides step-by-step instructions for creating an IAM role and assigning it to a VM on your cloud platform.

## 1. Create an IAM Role

- Log in to your cloud provider's console.



- **Navigate to the IAM service.**




- **Create a new role: Choose the service that**
- **will use this role (e.g., Compute Engine for Google Cloud or EC2 for AWS). Select the type of trusted entity (such as a service**
- **account or a specific user group). Steps are mentioned below**

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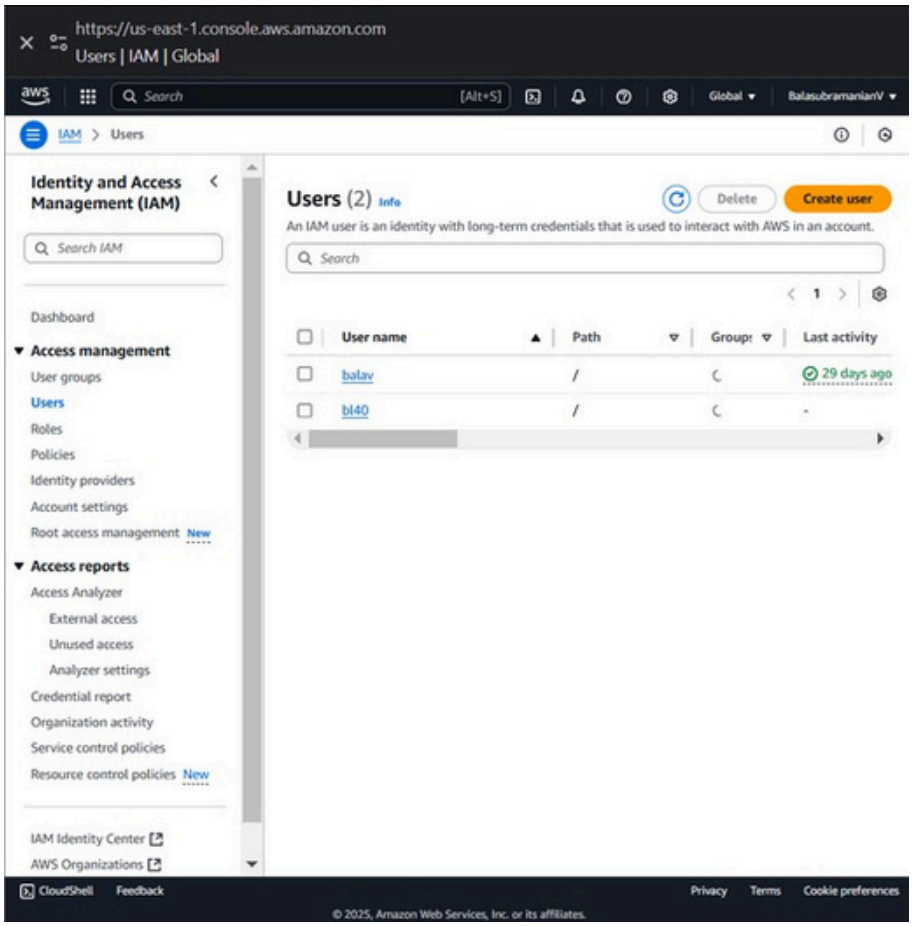
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Access management
User groups
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Policies
Identity providers
Account settings
Root access management New
Access reports
Access Analyzer
External access
Unused access
Analyzer settings
Credential report
Organization activity
Service control policies
Resource control policies New
IAM Identity Center
AWS Organizations
Users (2) Info
Delete
Create user
An IAM user is an identity with long-term credentials that is used to interact with AWS in an account.
Search
User name
Path
Group
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CloudShell
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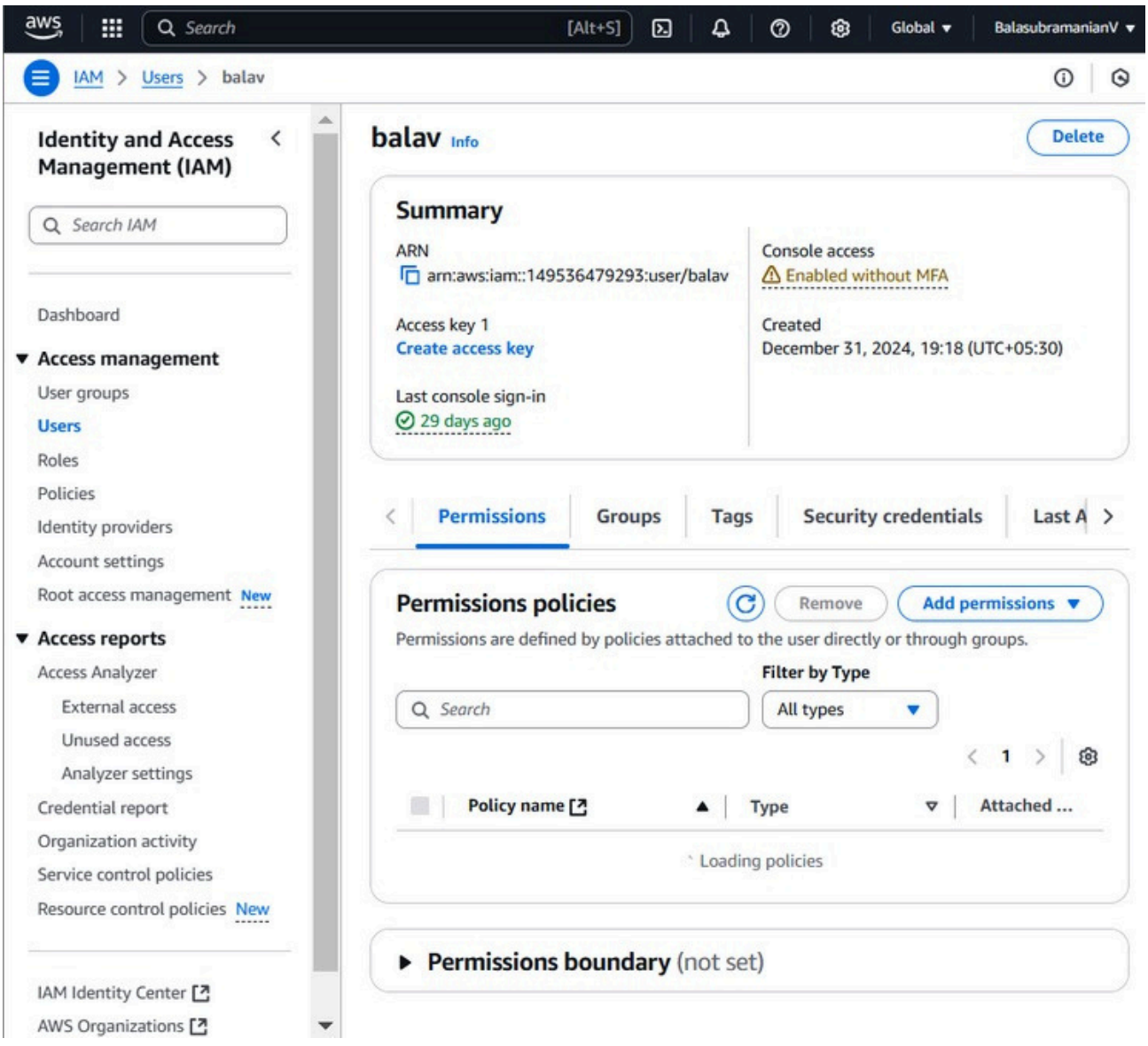
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Identity and Access Management (IAM)
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Account settings
Root access management New
Access reports
Access Analyzer
External access
Unused access
Analyzer settings
Credential report
Organization activity
Service control policies
Resource control policies New
IAM Identity Center
AWS Organizations
balav Info
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Summary
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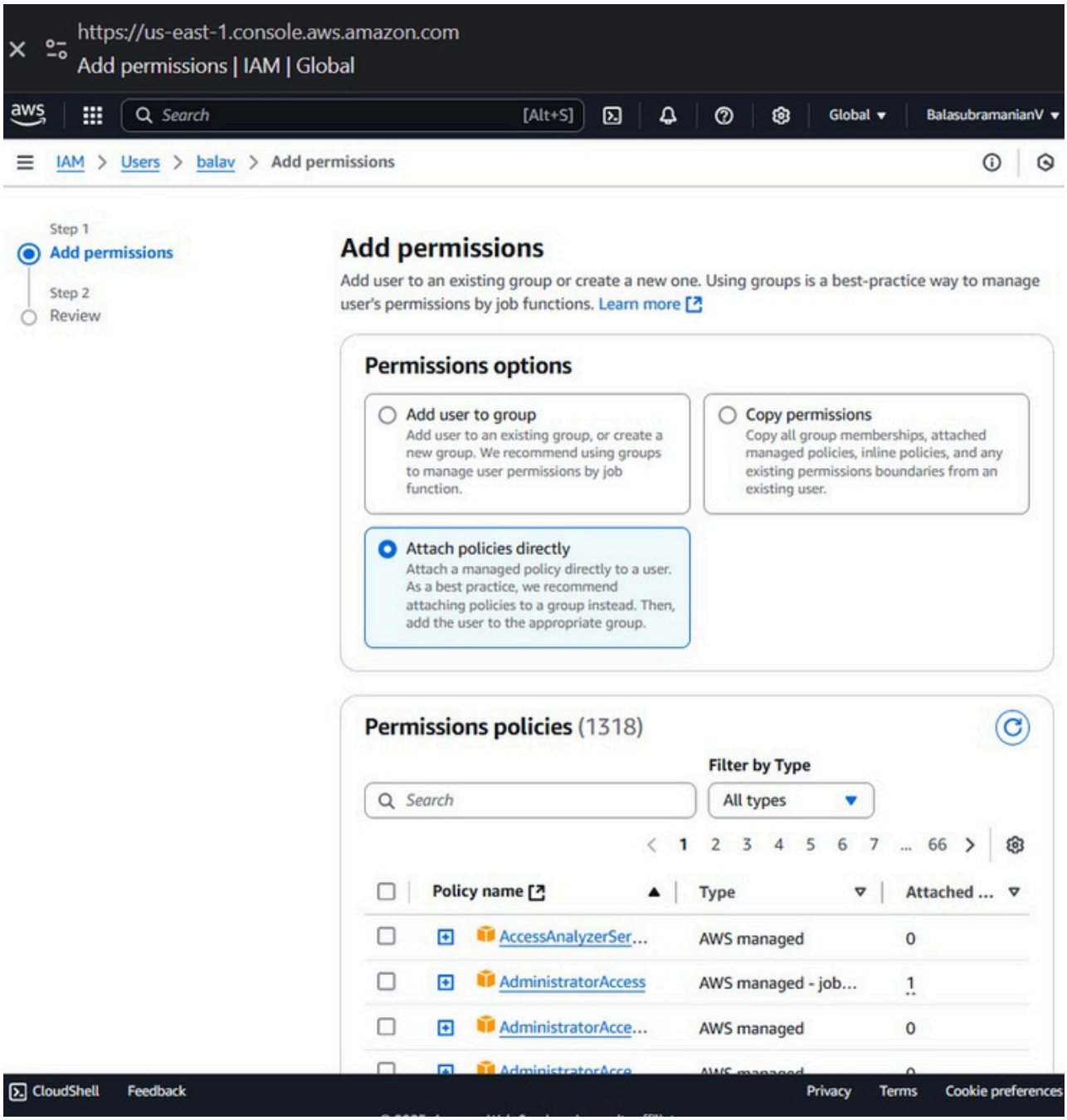
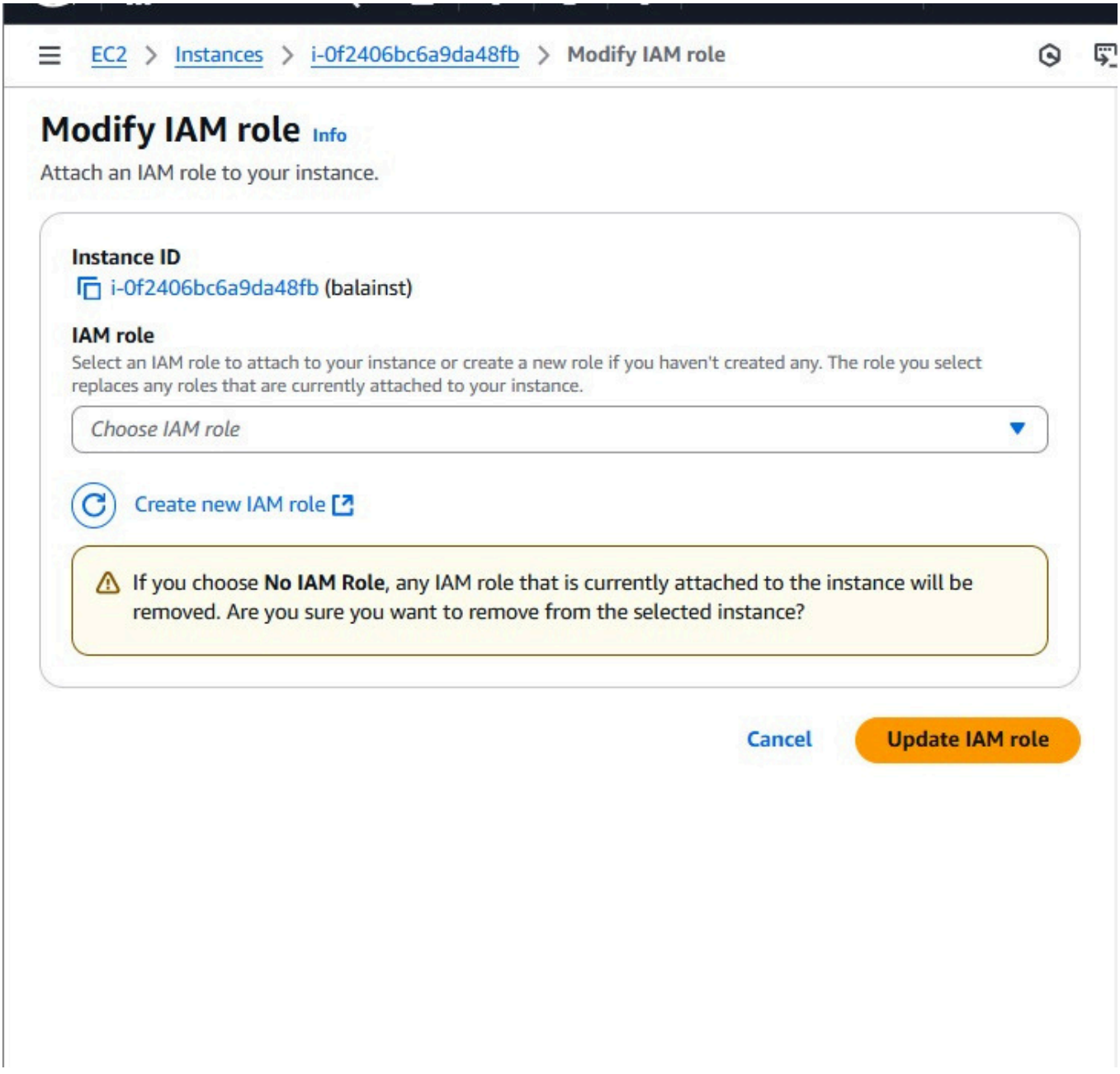
arn:aws:iam::149536479293:user/balav
Console access
Enabled without MFA
Access key 1
Create access key
Created
December 31, 2024, 19:18 (UTC+05:30)
Last console sign-in
29 days ago
Permissions
Groups
Tags
Security credentials
Last A
Permissions policies
Remove
Add permissions
Permissions are defined by policies attached to the user directly or through groups.
Filter by Type
Search
All types
1
Policy name
Type
Attached ...
Loading policies
Permissions boundary (not set)

- Attach necessary permissions:
- Assign allowed actions (e.g., read-only access, full control, or specific API permissions).



- **Provide a meaningful name and description for the role.**
- **Save the role.**

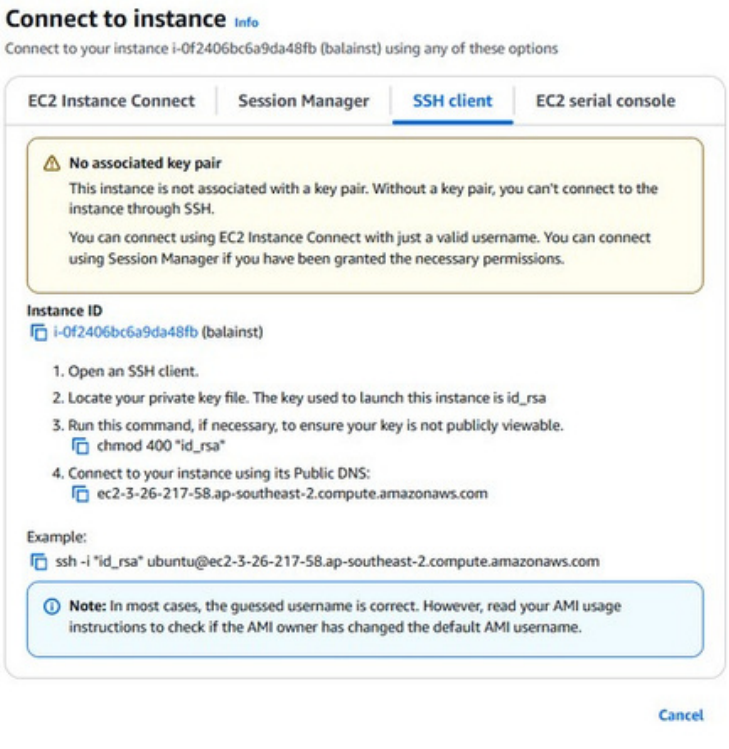
# Assign the Role to a Virtual Machine



- Modify Instance IAM Role:
- Select the EC2 instance you want to assign the IAM role to.
- Click Actions > Security > Modify IAM Role.
- Choose the IAM role created earlier from the dropdown.
- Click Update IAM Role.

## 3. Verify IAM Role Permissions

- Connect to the EC2 instance:
- Use SSH or AWS Systems Manager Session Manager to access the instance.
- Test Role Permissions:
- Run AWS CLI commands to verify permissions.
- Example: To check S3 access, run:



- **Ensure that restricted actions are blocked and allowed actions work as expected.**
- **Check IAM Logs:**
- **Navigate to AWS CloudTrail to monitor access logs and verify any unauthorized attempts.**

# Conclusion:

**Setting up IAM roles and permissions for your EC2 instance ensures secure and controlled access to AWS resources. Regularly review and update permissions to align with security best practices. By implementing IAM roles correctly, you reduce security risks and maintain a secure AWS environment.**