

EXPERIMENT – 3

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B2

STEP 1. Create an IAM User:

The screenshot shows the AWS IAM console 'Create user' page. A green banner at the top indicates 'User created successfully' with a 'View user' button. Below this, a sidebar on the left lists four steps: 'Specify user details', 'Set permissions', 'Review and create', and 'Retrieve password' (which is the active step). The main content area is titled 'Retrieve password' and explains that the user's password can be viewed or downloaded. It provides 'Console sign-in details' including a sign-in URL, the user name 'TestUser', and a masked console password with a 'Show' link. At the bottom right, there are buttons for 'Cancel', 'Download .csv file', and 'Return to users list'.

User created successfully
You can view and download the user's password and email instructions for signing in to the AWS Management Console. [View user](#)

Step 1
Specify user details
Step 2
Set permissions
Step 3
Review and create
Step 4
Retrieve password

Retrieve password
You can view and download the user's password below or email users instructions for signing in to the AWS Management Console. This is the only time you can view and download this password.

Console sign-in details [Email sign-in instructions](#)

Console sign-in URL
<https://043309320784.signin.aws.amazon.com/console>

User name
[TestUser](#)

Console password
[***** Show](#)

[Cancel](#) [Download .csv file](#) [Return to users list](#)

The screenshot shows the AWS IAM console 'Users' page. The left sidebar shows the 'Identity and Access Management (IAM)' menu with 'Users' selected. The main content area is titled 'Users (2)' and includes a description of IAM users. Below this is a table listing the users. The table has columns for 'User name', 'Path', 'Groups', 'Last activity', 'MFA', 'Password age', and 'Console last s'. Two users are listed: 'my-cli-user' and 'TestUser'. The 'my-cli-user' row shows a last activity of '5 days ago'. At the top right of the table, there are 'Delete' and 'Create user' buttons.

Identity and Access Management (IAM)

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.

<input type="checkbox"/>	User name	Path	Groups	Last activity	MFA	Password age	Console last s
<input type="checkbox"/>	my-cli-user	/	0	5 days ago	+	-	-
<input type="checkbox"/>	TestUser	/	0	-	+	-	-

STEP 2. Create an IAM Group:

The screenshot shows the AWS IAM console 'User groups' page. The left sidebar contains the 'Identity and Access Management (IAM)' menu with options like Dashboard, Access management (User groups, Users, Roles, Policies, Identity providers, Account settings, Root access management), and Access reports (Access Analyzer, External access, Unused access). The main content area is titled 'User groups (0)' and includes a search bar and a table with columns: Group name, Users, Permissions, and Creation time. The table is empty, displaying 'No resources to display'. At the top right, there are 'Delete' and 'Create group' buttons. The bottom of the page shows the AWS footer with copyright information and links to Privacy, Terms, and Cookie preferences.

The screenshot shows the 'Create user group' page in the AWS IAM console. The left sidebar is the same as the previous screenshot. The main content area is titled 'Name the group' and includes a 'User group name' field with the value 'S3ReadOnlyGroup'. Below this is the 'Add users to the group - Optional (1/2)' section, which includes a search bar and a table with columns: User name, Groups, Last activity, and Creation time. The table lists two users: 'my-cli-user' and 'TestUser'. The 'TestUser' row is selected. Below this is the 'Attach permissions policies - Optional (1/1023)' section, which includes a search bar with the value 'amazons3re' and a 'Filter by Type' dropdown set to 'All types'. The table below lists policies, with 'AmazonS3ReadOnlyAccess' selected. The bottom of the page shows the AWS footer with copyright information and links to Privacy, Terms, and Cookie preferences.

Practice - 3

User groups | IAM | Global

+

us-east-1.console.aws.amazon.com/iam/home?region=ap-south-1#/groups

Search

GlobalTharun%20Subramanian%20C

Identity and Access Management (IAM)

Search IAM

Dashboard

Access management

User groups

Users

Roles

Policies

Identity providers

Account settings

Root access management

Access reports

Access Analyzer

External access

Unused access

Analyzer settings

Credential report

Organization activity

Service control policies

S3ReadOnlyGroup user group created.

View group

X

User groups (1)

Info

Refresh

Delete

Create group

A user group is a collection of IAM users. Use groups to specify permissions for a collection of users.

Search

< 1 >

Settings

<input type="checkbox"/>	Group name	Users	Permissions	Creation time
<input type="checkbox"/>	S3ReadOnlyGroup	1	Defined	Now

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Practice - 3

Create access key | IAM | Global

+

us-east-1.console.aws.amazon.com/iam/home?region=ap-south-1#/users/details/TestUser/create-access-key

Search

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IAM

Users

TestUser

Create access key

Info

Step 1

Access key best practices & alternatives

Step 2 - optional

Set description tag

Step 3

Retrieve access keys

Access key best practices & alternatives

Info

Avoid using long-term credentials like access keys to improve your security. Consider the following use cases and alternatives.

Use case

☒ Command Line Interface (CLI)

You plan to use this access key to enable the AWS CLI to access your AWS account.

☐ Local code

You plan to use this access key to enable application code in a local development environment to access your AWS account.

☐ Application running on an AWS compute service

You plan to use this access key to enable application code running on an AWS compute service like Amazon EC2, Amazon ECS, or AWS Lambda to access your AWS account.

☐ Third-party service

You plan to use this access key to enable access for a third-party application or service that monitors or manages your AWS resources.

☐ Application running outside AWS

You plan to use this access key to authenticate workloads running in your data center or other infrastructure outside of AWS that needs to access your AWS resources.

☐ Other

Your use case is not listed here.

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STEP 3. Test Access:

The screenshot shows the AWS IAM console for a user named 'TestUser'. The left sidebar contains navigation links for Identity and Access Management (IAM), Access management, Access reports, and CloudShell. The main content area is divided into two sections: 'Multi-factor authentication (MFA) (0)' and 'Access keys (1)'. The MFA section indicates that no MFA devices are assigned and provides a button to 'Assign MFA device'. The Access keys section shows one active key with the ID 'AKIAQUFLPZJIBZL4YM6B'. The key's status is 'Active', and it was created 'Now'. The last used region is 'N/A' and the last used service is 'N/A'. A table below the key details shows the key's description, last used status, and last used region.

Type	Identifier	Certifications	Created on
No MFA devices. Assign an MFA device to improve the security of your AWS environment.			

Description	Status
Implement IAM for Secure Access Command Prompt	Active

Last used	Created
None	Now

Last used region	Last used service
N/A	N/A

```
Microsoft Windows [Version 10.0.26100.2894]
(c) Microsoft Corporation. All rights reserved.

C:\Users\tharu>aws configure
AWS Access Key ID [*****OQPW]: 
AWS Secret Access Key [*****hWx]: 
Default region name [ap-south-1]: ap-south-1
Default output format [json]: json

C:\Users\tharu>aws s3 ls

C:\Users\tharu>
```

STEP 4. Create and Assign an IAM Role:

Practice - 3

Create role | IAM | Global

+

us-east-1.console.aws.amazon.com/iam/home?region=ap-south-1#/roles/create

Search [Alt+S]

IAM > Roles > Create role

Step 1
Select trusted entity

Step 2
Add permissions

Step 3
Name, review, and create

Select trusted entity [Info](#)

Trusted entity type

☒ **AWS service**
Allow AWS services like EC2, Lambda, or others to perform actions in this account.

☐ **AWS account**
Allow entities in other AWS accounts belonging to you or a 3rd party to perform actions in this account.

☐ **Web identity**
Allows users federated by the specified external web identity provider to assume this role to perform actions in this account.

☐ **SAML 2.0 federation**
Allow users federated with SAML 2.0 from a corporate directory to perform actions in this account.

☐ **Custom trust policy**
Create a custom trust policy to enable others to perform actions in this account.

Use case
Allow an AWS service like EC2, Lambda, or others to perform actions in this account.
Service or use case
EC2
Choose a use case for the specified service.
Use case

☒ **EC2**
Allows EC2 instances to call AWS services on your behalf.

☐ **EC2 Role for AWS Systems Manager**
Allows EC2 instances to call AWS services like CloudWatch and Systems Manager on your behalf.

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Practice - 3

Roles | IAM | Global

+

us-east-1.console.aws.amazon.com/iam/home?region=ap-south-1#/roles

Search [Alt+S]

IAM > Roles

Identity and Access Management (IAM)

Search IAM

Dashboard

▼ Access management

User groups

Users

Roles

Policies

Identity providers

Account settings

Root access management

▼ Access reports

Access Analyzer

External access

Unused access

Analyzer settings

Credential report

Organization activity

Service control policies

Role EC2AdminRole created. [View role](#)

[Delete](#) [Create role](#)

Roles (3) [Info](#)

An IAM role is an identity you can create that has specific permissions with credentials that are valid for short durations. Roles can be assumed by entities that you trust.

<input type="checkbox"/>	Role name	Trusted entities	Last activity
<input type="checkbox"/>	AWSServiceRoleForSupport	AWS Service: support (Service-Linker)	-
<input type="checkbox"/>	AWSServiceRoleForTrustedAdvisor	AWS Service: trustedadvisor (Service-Linker)	-
<input type="checkbox"/>	EC2AdminRole	AWS Service: ec2	-

Roles Anywhere [Info](#)

Authenticate your non AWS workloads and securely provide access to AWS services. [Manage](#)

Access AWS from your non AWS workloads

Operate your non AWS workloads using the same authentication and authorization strategy that you use within AWS.

X.509 Standard

Use your own existing PKI infrastructure or use [AWS Certificate Manager Private Certificate Authority](#) to authenticate identities.

Temporary credentials

Use temporary credentials with ease and benefit from the enhanced security they provide.

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Practice - 3

Launch an instance | EC2 | ap-south-1

ap-south-1.console.aws.amazon.com/ec2/home?region=ap-south-1#LaunchInstances:

Search

Asia Pacific (Mumbai)

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EC2 > Instances > Launch an instance

Launch an instance

Amazon EC2 allows you to create virtual machines, or instances, that run on the AWS Cloud. Quickly get started by following the simple steps below.

Name and tags

Name

Test Instance

Add additional tags

Application and OS Images (Amazon Machine Image)

An AMI is a template that contains the software configuration (operating system, application server, and applications) required to launch your instance. Search or Browse for AMIs if you don't see what you are looking for below

Search our full catalog including 1000s of application and OS images

Recents

Quick Start

Amazon Linux

aws

macOS

Mac

Ubuntu

ubuntu

Windows

Microsoft

Red Hat

Red Hat

SUSE Linux

SUSE

Debian

debian

Browse more AMIs

Including AMIs from AWS, Marketplace and the Community

Amazon Machine Image (AMI)

Amazon Linux 2023 AMI

ami-05fa46471b02db0ce (64-bit (x86), uefi-preferred) / ami-0b0c4d8195066dcb (64-bit (Arm), uefi)

Free tier eligible

Summary

Number of instances

1

Software Image (AMI)

Amazon Linux 2023 AMI 2023.6.2...read more

ami-05fa46471b02db0ce

Virtual server type (instance type)

t2.micro

Firewall (security group)

New security group

Storage (volumes)

1 volume(s) - 8 GiB

Free tier

In your first year includes 750 hours of t2.micro (or t3.micro in the Regions in which t2.micro is unavailable) instance usage on free tier AMIs per month, 750 hours of public IPv4 address usage per month, 30 GiB of EBS storage, 2 million I/Os, 1 GB of snapshots, and 100 GB of bandwidth to the internet.

Cancel

Launch Instance

Preview code

CloudShell

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Practice - 3

Launch an instance | EC2 | ap-south-1

ap-south-1.console.aws.amazon.com/ec2/home?region=ap-south-1#LaunchInstances:

Search

Asia Pacific (Mumbai)

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EC2 > Instances > Launch an instance

Launch an instance

Success

Successfully initiated launch of instance (i-07771d7a177852c67)

Launch log

Next Steps

What would you like to do next with this instance, for example "create alarm" or "create backup"

Create billing and free tier usage alerts

To manage costs and avoid surprise bills, set up email notifications for billing and free tier usage thresholds.

Create billing alerts

Connect to your instance

Once your instance is running, log into it from your local computer.

Connect to instance

Learn more

Connect an RDS database

Configure the connection between an EC2 instance and a database to allow traffic flow between them.

Connect an RDS database

Create a new RDS database

Learn more

Create EBS snapshot policy

Create a policy that automates the creation, retention, and deletion of EBS snapshots

Create EBS snapshot policy

Manage detailed monitoring

Enable or disable detailed monitoring for the instance. If you enable detailed monitoring, the Amazon EC2 console displays monitoring graphs with a 1-minute

Create Load Balancer

Create an application, network gateway or classic Elastic Load Balancer

Create AWS budget

AWS Budgets allows you to create budgets, forecast spend, and take action on your costs and usage from a single location.

Manage CloudWatch alarms

Create or update Amazon CloudWatch alarms for the instance.

CloudShell

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Practice - 3

Instances | EC2 | ap-south-1

ap-south-1.console.aws.amazon.com/ec2/home?region=ap-south-1#Instances:

Dashboard

EC2 Global View

Events

Instances

Instance Types

Launch Templates

Spot Requests

Savings Plans

Reserved Instances

Dedicated Hosts

Capacity Reservations

Images

AMIs

AMI Catalog

Elastic Block Store

Volumes

Snapshots

Lifecycle Manager

Network & Security

Security Groups

Elastic IPs

Instances (1/1) Info

Last updated less than a minute ago

Connect

Instance state

Actions

Launch instances

Find Instance by attribute or tag (case-sensitive)

All states

<input checked="" type="checkbox"/>	Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 DNS	Public IPv6 DNS
<input checked="" type="checkbox"/>	Test Instance	i-07771d7a177852c67	Running	t2.micro	Initializing	View alarms +	ap-south-1b	ec2-43-204-219-220.ap...	43

i-07771d7a177852c67 (Test Instance)

Security details

IAM Role

EC2AdminRole

Security groups

sg-0fe3982b1f6707308 (launch-wizard-2)

Owner ID

043309320784

Launch time

Wed Jan 29 2025 17:34:26 GMT+0530 (India Standard Time)

Inbound rules

Filter rules

Name	Security group rule ID	Port range	Protocol	Source	Security groups
------	------------------------	------------	----------	--------	-----------------

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Practice - 3

VPC | ap-south-1

ap-south-1.console.aws.amazon.com/vpcconsole/home?region=ap-south-1#acls:

VPC dashboard

EC2 Global View

Filter by VPC

Virtual private cloud

Your VPCs

Subnets

Route tables

Internet gateways

Egress-only internet gateways

DHCP option sets

Elastic IPs

Managed prefix lists

NAT gateways

Peering connections

Security

Network ACLs

Security groups

PrivateLink and Lattice

Getting started Updated

Endpoints Updated

You have successfully updated inbound rules for acl-049576244b117d82b

Network ACLs (1/1) Info

Actions

Create network ACL

Find resources by attribute or tag

<input checked="" type="checkbox"/>	Name	Network ACL ID	Associated with	Default	VPC ID	Inbound rules count
<input checked="" type="checkbox"/>	-	acl-049576244b117d82b	3 Subnets	Yes	vpc-0f47fc0131a7efced	2 Inbound rules

Details

Inbound rules

Outbound rules

Subnet associations

Tags

Inbound rules (2)

Filter inbound rules

Rule number	Type	Protocol	Port range	Source	Allow/Deny
100	SSH (22)	TCP (6)	22	0.0.0.0/0	Allow
*	All traffic	All	All	0.0.0.0/0	Deny

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```
Command Prompt - aws ec2 x + v
cy allows the ec2:DescribeInstances action
C:\Users\tharu>
C:\Users\tharu>aws ec2 describe-instances
{
  "Reservations": [
    {
      "ReservationId": "r-0d2e3301d341204c2",
      "OwnerId": "043309320784",
      "Groups": [],
      "Instances": [
        {
          "Architecture": "x86_64",
          "BlockDeviceMappings": [
            {
              "DeviceName": "/dev/xvda",
              "Ebs": {
                "AttachTime": "2025-01-29T12:04:27+00:00",
                "DeleteOnTermination": true,
                "Status": "attached",
                "VolumeId": "vol-0a17ba73d12b7b619"
              }
            }
          ],
          "ClientToken": "9f391539-b576-4b01-b10f-7e461f869c32",
          "EbsOptimized": false,
          "EnaSupport": true,
          "Hypervisor": "xen",
          "IamInstanceProfile": {
            "Arn": "arn:aws:iam::043309320784:instance-profile/EC2AdminRole",
            "Id": "AIPAQUFLPZJIIW2Q3SLD"
          }
        }
      ]
    }
  ],
  "ClientToken": "9f391539-b576-4b01-b10f-7e461f869c32",
  "EbsOptimized": false,
  "EnaSupport": true,
  "Hypervisor": "xen",
  "IamInstanceProfile": {
    "Arn": "arn:aws:iam::043309320784:instance-profile/EC2AdminRole",
    "Id": "AIPAQUFLPZJIIW2Q3SLD"
  }
}
```

Step 6: Delete Instances

The screenshot shows the AWS Management Console interface for the 'Instances' page in the 'ap-south-1' region. A modal dialog titled 'Terminate (delete) instance?' is open, prompting the user to confirm the deletion of the selected instance. The dialog includes a warning about EBS-backed instances and a confirmation question: 'Are you sure you want to terminate these instances?'. Below this, the instance details are shown, including the Instance ID 'i-07771d7a177852c67' and its Termination protection status, which is 'Disabled'. The 'Terminate (delete)' button is highlighted in orange, indicating it is the primary action.

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 DNS	Public IPv4
Test Instance	i-07771d7a177852c67	Shutting-down	t2.micro	2/2 checks passed	View alarms	ap-south-1b	ec2-43-204-219-220.ap...	43

Practice - 4Security groups | EC2 | ap-south-1

ap-south-1.console.aws.amazon.com/ec2/home?region=ap-south-1#SecurityGroups:

Search[Alt+S]

Asia Pacific (Mumbai)Tharun%20Subramanian%20C

Reserved Instances

Dedicated Hosts

Capacity Reservations

▼ Images

AMIs

AMI Catalog

▼ Elastic Block Store

Volumes

Snapshots

Lifecycle Manager

▼ Network & Security

Security Groups

Elastic IPs

Placement Groups

Key Pairs

Network Interfaces

▼ Load Balancing

Load Balancers

Target Groups

▼ Auto Scaling

Auto Scaling Groups

Successfully deleted 2 security groups

Details

Security Groups (3) Info

Find resources by attribute or tag

Actions

Export security groups to CSV

Create security group

<input type="checkbox"/>	Name	Security group ID	Security group name	VPC ID	Description
<input type="checkbox"/>	-	sg-0f7052a0afab35e4e	default	vpc-0f47fc0131a7efced	default VPC security group
<input type="checkbox"/>	-	sg-0fe3982b1f6707308	launch-wizard-2	vpc-0f47fc0131a7efced	launch-wizard-2 created 2025-01-29T1...
<input type="checkbox"/>	-	sg-0e075dff649ee9eb2	launch-wizard-1	vpc-0f47fc0131a7efced	launch-wizard-1 created 2025-01-23T1...

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