

Assignment #2

Task 0 – AWS account already exists.

Task 1 – MFA is already enabled.

Task 2 – Create IAM user

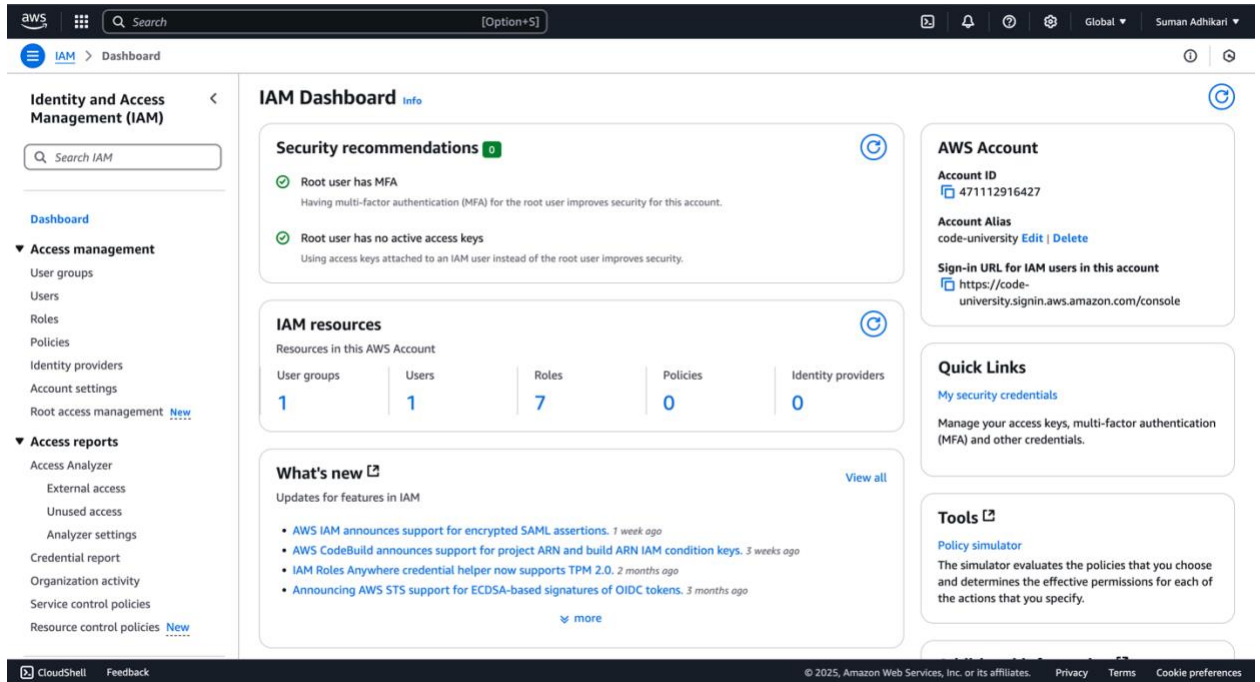
1. Access AWS console

The screenshot shows the AWS Management Console home page. The top navigation bar includes the AWS logo, a search bar, a user profile dropdown for 'Suman Adhikari', and the current region 'United States (N. Virginia)'. The main content area is titled 'Console Home' and features several widgets:

- Recently visited:** A list of services including IAM, Billing and Cost Management, Elastic Kubernetes Service, S3, CloudFront, Route 53, Certificate Manager, Lightsail, Resource Groups & Tag Editor, Support, AWS Organizations, and IAM Identity Center.
- Applications (0):** A section for managing applications in the 'us-east-1' region, with a 'Create application' button.
- Welcome to AWS:** A section with a rocket icon and a link to 'Getting started with AWS'.
- AWS Health:** A section showing 'Open issues' (0) and 'Scheduled changes' (0) for the 'Past 7 days' and 'Upcoming and past 7 days'.
- Cost and usage:** A section showing 'Current month costs' as '\$0.00' (100% compared to last month) and a bar chart for 'Forecasted month end costs'.

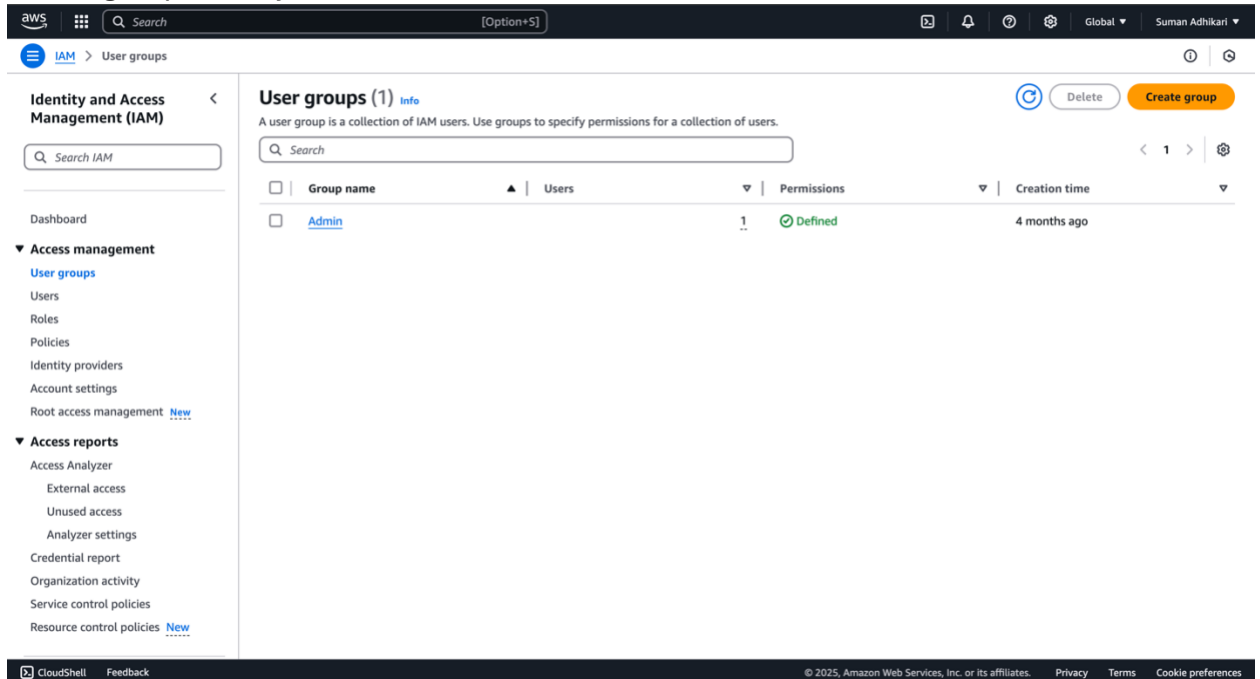
The bottom of the page includes a footer with 'CloudShell', 'Feedback', and copyright information for Amazon Web Services, Inc. or its affiliates, along with links for 'Privacy', 'Terms', and 'Cookie preferences'.

2. Go to IAM Dashboard



The screenshot shows the AWS IAM Dashboard. The left sidebar contains the 'Identity and Access Management (IAM)' menu with options like 'Access management' (User groups, Users, Roles, Policies, Identity providers, Account settings, Root access management) and 'Access reports' (Access Analyzer, External access, Unused access, Analyzer settings, Credential report, Organization activity, Service control policies, Resource control policies). The main content area is titled 'IAM Dashboard' and includes sections for 'Security recommendations' (Root user has MFA, Root user has no active access keys), 'IAM resources' (User groups: 1, Users: 1, Roles: 7, Policies: 0, Identity providers: 0), and 'What's new' (AWS IAM announces support for encrypted SAML assertions, AWS CodeBuild announces support for project ARN and build ARN IAM condition keys, IAM Roles Anywhere credential helper now supports TPM 2.0, Announcing AWS STS support for ECDSA-based signatures of OIDC tokens). The right sidebar shows 'AWS Account' information (Account ID: 471112916427, Account Alias: code-university) and 'Quick Links' (My security credentials, Tools like Policy simulator).

3. Admin group already exists



The screenshot shows the AWS IAM 'User groups' page. The left sidebar is the same as the previous screenshot. The main content area is titled 'User groups (1)' and includes a search bar and a table of user groups. The table has columns for 'Group name', 'Users', 'Permissions', and 'Creation time'. There is one group named 'Admin' with 1 user, 'Defined' permissions, and a creation time of '4 months ago'. The 'Create group' button is highlighted in orange.

Group name	Users	Permissions	Creation time
Admin	1	Defined	4 months ago

4. Create a new user 'cc-de-admin'

Search

(Option+S)

Global ▼Suman Adhikari ▾

IAM > Users > Create user

Step 1
Create new IAM user

Step 2
Set permissions

Step 3
Review and create

Step 4
Retrieve password

User details

User name

cc-de-admin

The user name can have up to 64 characters. Valid characters: A-Z, a-z, 0-9, and + = , @ _ - (hyphen)

☒ Provide user access to the AWS Management Console - optional

If you're providing console access to a person, it's a best practice 🔗 to manage their access in IAM Identity Center.

📘 Are you providing console access to a person?

User type

- ☐ Specify a user in Identity Center - Recommended

We recommend that you use Identity Center to provide console access to a person. With Identity Center, you can centrally manage user access to their AWS accounts and cloud applications.
- ☒ I want to create an IAM user

We recommend that you create IAM users only if you need to enable programmatic access through access keys, service-specific credentials for AWS CodeCommit or Amazon Keyspaces, or a backup credential for emergency account access.

Console password

☐ Autogenerated password

You can view the password after you create the user.

☒ Custom password

Enter a custom password for the user:

- Must be at least 8 characters long
- Must include at least three of the following mix of character types: uppercase letters (A-Z), lowercase letters (a-z), numbers (0-9), and symbols !@#\$%^&*()_+-~(hyphen)=[]{}'|`

☐ Show password

☐ Users must create a new password at next sign-in - Recommended

Users automatically get the IAMUserChangePassword 🔗 policy to allow them to change their own password.

5. Attach admin group to user

[illegible]

6. Review and Create user

The screenshot shows the AWS IAM console 'Users' page. The left sidebar contains navigation links for Identity and Access Management (IAM), Access management, Access reports, and CloudShell. The main content area features a banner for 'Ready to streamline human access to AWS and cloud apps?' with a 'Manage workforce users' button. Below this, the 'Users (2)' section shows a table of existing users. The table has columns for checkboxes, User name, Path, Groups, Last activity, MFA, Password age, and Console last sign-in. Two users are listed: 'ariel-adhikari' and 'cc-de-admin'.

<input type="checkbox"/>	User name	Path	Groups	Last activity	MFA	Password age	Console last sign-in
<input type="checkbox"/>	ariel-adhikari	/	1	11 days ago	Virtual	146 days	January 07, 2025, 17:2...
<input type="checkbox"/>	cc-de-admin	/	1	-	-	22 minutes	-

7. User created

The screenshot shows the 'Create user' wizard in the AWS IAM console, specifically Step 3: 'Review and create'. The left sidebar shows the progress: Step 1 (Specify user details), Step 2 (Set permissions), Step 3 (Review and create), and Step 4 (Retrieve password). The main content area is titled 'Review and create' and includes a 'User details' section with fields for 'User name' (cc-de-admin), 'Console password type' (Custom password), and 'Require password reset' (No). Below this is a 'Permissions summary' table showing the 'Admin' group assigned as the 'Permissions group'. At the bottom, there is a 'Tags - optional' section with an 'Add new tag' button. The bottom of the page features a footer with 'CloudShell', 'Feedback', and copyright information.

Name	Type	Used as
Admin	Group	Permissions group

Task 3 – Create a billing alarm

1. Go to Cloudwatch dashboard

The screenshot shows the AWS CloudWatch dashboard. The top navigation bar includes the AWS logo, a search bar, and the user's name 'Suman Adhikari'. The left sidebar contains a menu with 'CloudWatch' selected, and sub-items like 'Dashboards', 'Alarms', 'Logs', 'Metrics', 'X-Ray traces', 'Events', 'Application Signals', 'Network Monitoring', and 'Insights'. The main content area is titled 'Overview' and features a 'Get started with CloudWatch' section with four cards: 'Create alarms', 'Create a default dashboard', 'View logs', and 'View events'. Below this is a 'Get started with Observability solutions' section with three cards: 'Reliable observability solutions', 'Available in Amazon native and open-source platforms', and 'Simplify the process of instrumenting and gaining insights'. At the bottom, there is a 'Get started with Application Insights' section with a 'Configure Application Insights' button. The footer includes 'CloudShell', 'Feedback', and copyright information for Amazon Web Services.

2. Go to billing alarms

The screenshot shows the AWS CloudWatch 'Alarms' page. The left sidebar is the same as the previous screenshot, but the 'Alarms' item is selected. The main content area is titled 'Billing alarms (0)' and includes a 'Create alarm' button. Below the title, there is a section titled 'Amazon CloudWatch can help you monitor the charges on your AWS bill' by sending you email alerts when charges exceed a threshold you define. It explains that once you update your preferences in the Account Billing console, you will begin receiving Amazon CloudWatch metrics that reflect your month-to-date AWS charges. It also mentions that you get 10 free alarms and 1,000 free e-mail notifications each month as part of the AWS Free Tier. A 'Create alarm' button is prominently displayed at the bottom of this section. The footer is identical to the previous screenshot.

3. Create billing alarm for threshold greater than \$1.

aws Search [Option+5] United States (N. Virginia) Suman Adhikari

CloudWatch > Alarms > Create alarm

Threshold type

☒ Static Use a value as a threshold

☐ Anomaly detection Use a band as a threshold

Whenever EstimatedCharges is...
Define the alarm condition.

☒ Greater > threshold

☐ Greater/Equal >= threshold

☐ Lower/Equal <= threshold

☐ Lower < threshold

than...
Define the threshold value.

1 USD

Must be a number

Additional configuration

Datapoints to alarm
Define the number of datapoints within the evaluation period that must be breaching to cause the alarm to go to ALARM state.

1 out of 1

Missing data treatment
How to treat missing data when evaluating the alarm.

Treat missing data as missing

Cancel Next

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aws Search [Option+5] United States (N. Virginia) Suman Adhikari

CloudWatch > Alarms > Create alarm

Step 1 **Specify metric and conditions**

Step 2 Configure actions

Step 3 Add name and description

Step 4 Preview and create

Specify metric and conditions

Metric

Graph
This alarm will trigger when the blue line goes above the red line for 1 datapoints within 6 hours.

No unit

2

1

0

02/10 02/11 02/12 02/13 02/14 02/15 02/16

EstimatedCharges

Namespace
AWS/Billing

Metric name
EstimatedCharges

Currency
USD

Statistic
Maximum

Period
6 hours

Conditions

Threshold type

☒ Static Use a value as a threshold

☐ Anomaly detection Use a band as a threshold





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4. Add topic and email endpoints

aws

Search

[Option+5]



United States (N. Virginia)

Suman Adhikari

CloudWatch

Alarms

Create alarm

Step 1

Specify metric and conditions

Step 2

Configure actions

Step 3

Add name and description

Step 4

Preview and create

Configure actions

Notification

Alarm state trigger
Define the alarm state that will trigger this action.

☒ **In alarm**
The metric or expression is outside of the defined threshold.

☐ **OK**
The metric or expression is within the defined threshold.

☐ **Insufficient data**
The alarm has just started or not enough data is available.

Remove

Send a notification to the following SNS topic
Define the SNS (Simple Notification Service) topic that will receive the notification.

☐ Select an existing SNS topic

☒ **Create new topic**

☐ Use topic ARN to notify other accounts

Create a new topic...
The topic name must be unique.

SNS topic names can contain only alphanumeric characters, hyphens (-) and underscores (_).

Email endpoints that will receive the notification...
Add a comma-separated list of email addresses. Each address will be added as a subscription to the topic above.

user1@example.com, user2@example.com

Create topic

Add notification

CloudShell

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United States (N. Virginia)

Suman Adhikari

CloudWatch

Alarms

Create alarm

Step 1

Specify metric and conditions

Step 2

Configure actions

Step 3

Add name and description

Step 4

Preview and create

Configure actions

Notification

Alarm state trigger
Define the alarm state that will trigger this action.

☒ **In alarm**
The metric or expression is outside of the defined threshold.

☐ **OK**
The metric or expression is within the defined threshold.

☐ **Insufficient data**
The alarm has just started or not enough data is available.

Remove

Send a notification to the following SNS topic
Define the SNS (Simple Notification Service) topic that will receive the notification.

☒ **Select an existing SNS topic**

☐ Create new topic

☐ Use topic ARN to notify other accounts

Send a notification to...

Only topics belonging to this account are listed here. All persons and applications subscribed to the selected topic will receive notifications.

Email (endpoints)
suman.adhikari@miu.edu - [View in SNS Console](#)

Add notification

Lambda action

Add Lambda action

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5. Add name and description

The screenshot shows the AWS CloudWatch console interface for creating an alarm. The top navigation bar includes the AWS logo, a search bar, and user information (United States (N. Virginia), Suman Adhikari). The breadcrumb trail is CloudWatch > Alarms > Create alarm. On the left, a vertical step indicator shows four steps: Step 1 (Specify metric and conditions), Step 2 (Configure actions), Step 3 (Add name and description, which is the active step), and Step 4 (Preview and create). The main content area is titled 'Add name and description'. It contains a form with two sections: 'Name and description' and 'Alarm description - optional'. The 'Name and description' section has a text input field for the 'Alarm name' with the value 'MyBillingAlarm'. The 'Alarm description - optional' section has a text area for the 'Alarm description' with the value '# This is an H1\n**double asterisks will produce strong character**\nThis is [an example](https://example.com/) inline link.' Below the text area is a character count 'Up to 1024 characters (0/1024)'. A note at the bottom states: 'Markdown formatting is only applied when viewing your alarm in the console. The description will remain in plain text in the alarm notifications.' At the bottom right of the form are three buttons: 'Cancel', 'Previous', and 'Next'.

Step 1
Specify metric and conditions

Step 2
Configure actions

Step 3
Add name and description

Step 4
Preview and create

Add name and description

Name and description

Alarm name

MyBillingAlarm

Alarm description - optional [View formatting guidelines](#)

Edit Preview

This is an H1
double asterisks will produce strong character
This is [an example](https://example.com/) inline link.

Up to 1024 characters (0/1024)

ⓘ Markdown formatting is only applied when viewing your alarm in the console. The description will remain in plain text in the alarm notifications.

Cancel Previous Next

6. Review Alarm configuration

The screenshot shows the AWS CloudWatch console interface for reviewing the alarm configuration. The top navigation bar is the same as in the previous screenshot. The breadcrumb trail is CloudWatch > Alarms > Create alarm. The vertical step indicator shows four steps: Step 1 (Specify metric and conditions), Step 2 (Configure actions), Step 3 (Add name and description), and Step 4 (Review Alarm configuration, which is the active step). The main content area is titled 'Review Alarm configuration'. It contains three sections: 'Step 1: Specify metric and conditions', 'Step 2: Configure actions', and 'Step 3: Add name and description'. The 'Step 1' section shows a metric 'MyBillingAlarm' with a condition 'Greater (>)' and a threshold '1'. The 'Step 2' section shows 'Actions' with a notification 'When in alarm, send a notification to "MyBillingAlarm"'. The 'Step 3' section shows 'Name and description' with 'Name: MyBillingAlarm' and 'Description: -'. At the bottom right of the form are three buttons: 'Cancel', 'Previous', and 'Create alarm'.

Step 1: Specify metric and conditions

Greater (>)

than...

1

► Additional configuration

Step 2: Configure actions

Actions

Notification

When in alarm, send a notification to "MyBillingAlarm"

Step 3: Add name and description

Name and description

Name

MyBillingAlarm

Description

-

Cancel Previous Create alarm

7. Alarm created

aws

sns

United States (N. Virginia)

Suman Adhikari

CloudWatch > Alarms

CloudWatch

Favorites and recents

Dashboards

AI Operations [Preview](#)

Alarms [1](#)

In alarm

All alarms

Billing

Logs [New](#)

Metrics

X-Ray traces [New](#)

Events

Application Signals

Network Monitoring [New](#)

Insights

Settings

Telemetry config [New](#)

Getting Started

What's new

Successfully created alarm MyBillingAlarm. [View alarm](#)

Some subscriptions are pending confirmation
Amazon SNS doesn't send messages to an endpoint until the subscription is confirmed [View SNS Subscriptions](#)

Billing alarms (1)

Hide Auto Scaling alarms

Clear selection

Create composite alarm

Actions

Create alarm

Search

Alarm state: Any

Alarm type: Any

Actions status: Any

< 1 >

	Name	State	Last state update (UTC)	Conditions	Actions
<input type="checkbox"/>	MyBillingAlarm	Insufficient data	2025-02-16 17:50:50	EstimatedCharges > 1 for 1 datapoints within 6 hours	Actions enabled

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