

МІНІСТЕРСТВО ОСВІТИ І НАУКИ
УКРАЇНИ НАЦІОНАЛЬНИЙ
ТЕХНІЧНИЙ УНІВЕРСИТЕТ
УКРАЇНИ
«КІЇВСЬКИЙ ПОЛІТЕХНІЧНИЙ ІНСТИТУТ ІМЕНІ ІГОРЯ
СІКОРСЬКОГО»ІНСТИТУТ ПРИКЛАДНОГО СИСТЕМНОГО
АНАЛІЗУ
Кафедра штучного інтелекту

ЗВІТ
про виконання
лабораторної
роботи № 1 з
дисципліни
«Хмарні технології
та сервіси»

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Перевірив:

Київ – 2025

1. Set-up account

The screenshot shows the AWS Console Home page with the following layout:

- Recently visited:** VPC, IAM
- Applications (0):** Create application
- Welcome to AWS:**
 - Getting started with AWS: Learn the fundamentals and find valuable information to get the most out of AWS.
 - Training and certification: Learn from AWS experts and advance your skills and knowledge.
 - AWS Builder Center: Learn, build, and connect with builders in the AWS community.
- AWS Health:**
 - Open issues: 0 (Past 7 days)
 - Scheduled changes: 0 (Upcoming and past 7 days)
 - Other notifications: 0 (Past 7 days)
- Cost and usage:** Data unavailable. Turn on Cost Explorer.
- Solutions:** Go to AWS Solutions Library
- Explore AWS:**
- Security:** Region: Europe (Stockholm). Go to Security Hub CSPM
- Trusted Advisor:** Go to Trusted Advisor
- Latest announcements:** View all announcements
- Recent AWS blog posts:** View all blog posts

At the bottom, there are links for CloudShell, Feedback, and Console Mobile App, along with copyright information and cookie preferences.

1a. Create an IAM user and attach FullAdmin policy

S Site popup blocking settings: Allow once Allow always Block always ⓘ X

IAM > Users

Identity and Access Management (IAM)

Search IAM

Access management

- User groups
- Users**
- Roles
- Policies
- Identity providers
- Account settings
- Root access management
- Temporary delegation requests [New](#)

Access reports

- Access Analyzer
 - Resource analysis [New](#)
 - Unused access
 - Analyzer settings
- Credential report
- Organization activity
- Service control policies
- Resource control policies

IAM Identity Center [AWS Organizations](#)

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Users (1) Info

An IAM user is an identity with long-term credentials that is used to interact with AWS in an account.

User name	Path	Group	Last activity	MFA	Password age	Console last sign-in	Acc
Admin	/	0	-	-	-	Now	-

Admin Info

Summary

ARN: arn:aws:iam::771805193049:user/Admin

Console access: Enabled without MFA

Created: November 23, 2025, 10:30 (UTC+02:00)

Last console sign-in: Never

Access key 1: Create access key

Permissions

Permissions policies (2):

Permissions are defined by policies attached to the user directly or through groups.

Policy name	Type	Attached via
AdministratorAccess	AWS managed - job function	Directly
IAMUserChangePassword	AWS managed	Directly

Generate policy based on CloudTrail events

You can generate a new policy based on the access activity for this user, then customize, create, and attach it to this role. AWS uses your CloudTrail events to identify the services and actions used and generate a policy. [Learn more](#)

Generate policy

No requests to generate a policy in the past 7 days.

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3. Create one more user. Create an IAM policy that allows ONLY to view resources

Screenshot of the AWS IAM User details page for 'Viewer'.

Summary

- ARN: arn:aws:iam::771805193049:user/Viewer
- Console access: Enabled without MFA
- Created: November 23, 2025, 10:38 (UTC+02:00)
- Last console sign-in: Never
- Access key 1: Create access key

Permissions

Permissions policies (1): ReadOnlyAccess (AWS managed - job function, Directly attached).

Permissions boundary (not set)

Generate policy based on CloudTrail events

No requests to generate a policy in the past 7 days.

Screenshot of the AWS IAM Role details page for 'View-Role'.

Summary

- Creation date: November 23, 2025, 10:42 (UTC+02:00)
- ARN: arn:aws:iam::771805193049:role/View-Role
- Last activity: -
- Maximum session duration: 1 hour
- Link to switch roles in console: https://signin.aws.amazon.com/switchrole?roleName=View-Role&account=771805193049

Permissions

Permissions policies (1): ReadOnlyAccess (AWS managed - job function, 1 attached entity).

Permissions boundary (not set)

Generate policy based on CloudTrail events

No requests to generate a policy in the past 7 days.

The screenshot shows the AWS Identity and Access Management (IAM) service interface. On the left, a navigation sidebar lists various IAM features like 'Identity and Access Management (IAM)', 'Dashboard', 'Access management', 'Access reports', and 'Logs'. The main content area is titled 'Viewer' and contains a 'Summary' section with details such as ARN (arn:aws:iam::771805193049:user/Viewer), Console access (Enabled without MFA), and Last console sign-in (Never). Below this is a 'Permissions' tab, which displays a single attached policy named 'Allow-Assume-View'. There's also a 'Permissions boundary' section indicating '(not set)' and a 'Generate policy based on CloudTrail events' section with a note about generating policies from CloudTrail activity.

The screenshot shows the Amazon Elastic Compute Cloud (EC2) service landing page. The left sidebar lists EC2 features: 'Compute', 'Instances', 'Images', and 'Elastic Block Store'. The main content area features a large heading 'Amazon Elastic Compute Cloud (EC2)' with the subtext 'Create, manage, and monitor virtual servers in the cloud.' Below this is a 'Benefits and features' section with a callout for 'EC2 offers ultimate scalability and control', listing benefits like highest level of control, widest variety of server size options, widest availability of operating systems, and global scalability. To the right, there's a 'Free plan status' summary showing '\$100.00 USD' credits remaining and '182 days' days remaining. It also shows the account is currently active as 'Viewer' with Account ID '7718-0519-3049' and 'Access denied' color.

5. Create a network (VPC for your resources). There should be private and public subnets. Public one has IGW, private ones are for internal access only.

Screenshot of the AWS VPC console showing the configuration of a VPC and its associated route tables.

Your VPCs (1/2) Info

Last updated 5 minutes ago Actions Create VPC

Name	VPC ID	State	Encryption c...	Encryption control ...	Block Public...	IPv4 CIDR	IPv6 CIDR
-	vp-01926d842a7b85c56	Available	-	-	Off	172.31.0.0/16	-
<input checked="" type="checkbox"/> Lab-my-vpc	vp-053cc494c6d4f29bc	Available	-	-	Off	10.0.0.0/16	-

vpc-053cc494c6d4f29bc / Lab-my-vpc

Resource map Info

Show all details

- VPC**: Your AWS virtual network (Lab-my-vpc)
- Subnets (2)**: Subnets within this VPC (eu-north-1b)
 - Public-Subnet
 - Private-Subnet
- Route tables (2)**: Route network traffic to resources
 - Public-RT
 - Private-RT
- Network Connections (**: Connections to other network (Lab_my_IGW)

Route tables (1/3) Info

Last updated 3 minutes ago Actions Create route table

Name	Route table ID	Explicit subnet assoc...	Edge associations	Main	VPC
Private-RT	rtb-03039f842a09f8a83	subnet-0980dcc9598178...	-	Yes	vp-053cc494c6d4f29bc Lab
-	rtb-00fad247892c6c91b	-	-	Yes	vp-01926d842a7b85c56
<input checked="" type="checkbox"/> Public-RT	rtb-08e5d49505df464e5	subnet-013e1313ad5ba9...	-	No	vp-053cc494c6d4f29bc Lab

rtb-08e5d49505df464e5 / Public-RT

Details Routes Subnet associations Edge associations Route propagation Tags

Routes (2)

Both Edit routes

Destination	Target	Status	Propagated	Route Origin
0.0.0.0/0	igw-0958839b8537336bd	Active	No	Create Route
10.0.0.0/16	local	Active	No	Create Route Table

8. Calculate monthly budget for lab 2, assuming there will be only 2 shards.

Successfully updated Amazon Kinesis Data Streams estimate. X

[AWS Pricing Calculator](#) > [My Estimate](#) > Edit Amazon Kinesis Data Streams

Edit Amazon Kinesis Data Streams Info

Description

Budget

Choose a location type Info

Region

Provisioned Mode

With provisioned capacity mode, you specify the number of shards necessary for your application based on its write and read request rate. A shard is a unit of capacity that provides 1 MB/second of write and 2 MB/second of read throughout.

Choose a Region

Europe (Frankfurt)

On-Demand Mode

With on-demand capacity mode, you pay per GB of data written and read from your data streams. You do not need to specify how much read and write throughput you expect your application to perform. Kinesis Data Streams instantly accommodates your workloads as they ramp up or down.

Service Settings Info

Baseline number of records

1500

Unit

per second

Peak number of records

Enter amount

Unit

per second

Average record size

1

Unit

KB

Buffer for growth and to absorb un-expected peaks

20

%

Number of Consumer Applications

Consider using Enhanced Fan Out consumers if you need 70ms latency and have more than two consumers.

Enter the amount

Duration of data retention

Kinesis Data Streams stores your data for 24 hours by default. You're charged extended data retention rates for the first seven days and then charged a lower GB-month rate for data stored beyond seven days up to your specified retention period.

Value

1

Unit

days

Number of Enhanced fan-out consumers

Enter the amount

▼ Show calculations

Unit conversions

Buffer for growth and to absorb un-expected peaks: 20 / 100 = 0.2

Duration of data retention: 1 days = 24 hours

Pricing calculations

1 KB / 1024 KB to MB conversion factor = 0.00097656 MB (Record size)

1,500 baseline records per sec x 2628000 seconds in a month x 0.00097656 MB = 3,849,599.52 Baseline data volume per month (MB)

3,849,599.52 MB / 1024 MB to GB conversion factor = 3,759.37 Baseline data volume per month (GB)

Baseline data per month (GB): 3,759.37

0.00097656 MB x 1,500 baseline records per sec = 1.46 MB/sec (Baseline data ingress rate)

Baseline ingress (MB/sec): 1.46

Peak ingress (MB/sec): 0

Baseline egress (MB/sec): 0

Peak egress (MB/sec): 0

Max (0 shards needed for peak ingress, 0 shards needed for peak egress, 0 shards needed for peak records, 1 minimum shard) = 1.00 Number of shards

1.00 shards x 0.20 buffer factor = 0.20 shards (buffer)

1.00 shards + 0.20 shards (buffer) = 1.20 number of shards needed (including buffer for unexpected peaks)

RoundUp (1.20) = 2 shards

Shards per month: 2

2 billable shards x 730 hours per month = 1,460.00 Shard hours per month

1,460.00 shard hours x 0.018 USD = 26.28 USD

Shard hours per month cost: 26.28 USD

1 KB / 25 Payload Unit factor = 0.04 PUT Payload Units fraction

RoundUp (0.04) = 1 PUT Payload Units

1 PUT Payload Units x 1,500 baseline records per sec x 2628000 seconds in a month = 3,942,000,000.00 PUT Payload Units per month

3,942,000,000.00 PUT Payload Units x 0.0000000175 USD = 68.98 USD

PUT Payload Units per month cost: 68.98 USD

Enhanced fan-out consumer-shard hours cost: 0 USD

Enhanced fan-out data retrievals cost: 0 USD

26.28 USD + 68.98 USD = 95.26 USD

Kinesis data stream cost (monthly): 95.26 USD

Acknowledgement

AWS Pricing Calculator provides only an estimate of your AWS fees and doesn't include any taxes that might apply. Your actual fees depend on a variety of factors, including your actual usage of AWS services. [Learn more](#)

Total Upfront cost: 0.00 USD

Show Details ▾

Total Monthly cost: 95.26 USD

Cancel

Update