

AWS Recitation for 10-617

By,

Udaikaran Singh

- AWS = Amazon Web Services
- Cloud Computing Service for tasks like:
 - Analytics
 - Compute
 - Database
 - Networking
 - ...

Compute

[EC2](#)
[Lightsail](#)
[Lambda](#)
[Batch](#)
[Elastic Beanstalk](#)
[Serverless Application Repository](#)
[AWS Outposts](#)
[EC2 Image Builder](#)
[AWS App Runner](#)

Containers

[Elastic Container Registry](#)
[Elastic Container Service](#)
[Elastic Kubernetes Service](#)
[Red Hat OpenShift Service on AWS](#)

Storage

[S3](#)
[EFS](#)
[FSx](#)
[S3 Glacier](#)
[Storage Gateway](#)
[AWS Backup](#)
[AWS Elastic Disaster Recovery](#)

Database

[RDS](#)
[Amazon Aurora](#)

Quantum Technologies

[Amazon Braket](#)

Management & Governance

[AWS Organizations](#)
[CloudWatch](#)
[AWS Auto Scaling](#)
[CloudFormation](#)
[Config](#)
[OpsWorks](#)
[Service Catalog](#)
[Systems Manager](#)
[AWS AppConfig](#)
[Trusted Advisor](#)
[Control Tower](#)
[AWS License Manager](#)
[AWS Well-Architected Tool](#)
[AWS Health Dashboard](#)
[AWS Chatbot](#)
[Launch Wizard](#)
[AWS Compute Optimizer](#)
[Resource Groups & Tag Editor](#)
[Amazon Grafana](#)
[Amazon Prometheus](#)
[AWS Proton](#)
[AWS Resilience Hub](#)
[Incident Manager](#)
[CloudTrail](#)

 Machine Learning

Security, Identity, & Compliance

[IAM](#)
[Resource Access Manager](#)
[Cognito](#)
[Secrets Manager](#)
[GuardDuty](#)
[Inspector](#)
[Amazon Macie](#)
[IAM Identity Center \(successor to AWS Single Sign-On\)](#)
[Certificate Manager](#)
[Key Management Service](#)
[CloudHSM](#)
[Directory Service](#)
[WAF & Shield](#)
[AWS Firewall Manager](#)
[Artifact](#)
[Security Hub](#)
[Detective](#)
[AWS Signer](#)
[AWS Network Firewall](#)
[AWS Audit Manager](#)

 AWS Cost Management

[AWS Cost Explorer](#)
[AWS Budgets](#)
[AWS Marketplace Subscriptions](#)
[AWS Application Cost Profiler](#)
[AWS Billing Conductor](#)

- EC2: Elastic Compute Cloud
 - Primarily service you should be using
 - Allows for elastic number of cpus, gpus, storage
 - You can use this for training and evaluating your models

Compute

EC2

[Lightsail](#)
[Lambda](#)
[Batch](#)
[Elastic Beanstalk](#)
[Serverless Application Repository](#)
[AWS Outposts](#)
[EC2 Image Builder](#)
[AWS App Runner](#)

Containers

[Elastic Container Registry](#)
[Elastic Container Service](#)
[Elastic Kubernetes Service](#)
[Red Hat OpenShift Service on AWS](#)

Storage

[S3](#)
[EFS](#)
[FSx](#)
[S3 Glacier](#)
[Storage Gateway](#)
[AWS Backup](#)
[AWS Elastic Disaster Recovery](#)

Quantum Technologies

[Amazon Braket](#)

Management & Governance

[AWS Organizations](#)
[CloudWatch](#)
[AWS Auto Scaling](#)
[CloudFormation](#)
[Config](#)
[OpsWorks](#)
[Service Catalog](#)
[Systems Manager](#)
[AWS AppConfig](#)
[Trusted Advisor](#)
[Control Tower](#)
[AWS License Manager](#)
[AWS Well-Architected Tool](#)
[AWS Health Dashboard](#)
[AWS Chatbot](#)
[Launch Wizard](#)
[AWS Compute Optimizer](#)
[Resource Groups & Tag Editor](#)
[Amazon Grafana](#)
[Amazon Prometheus](#)
[AWS Proton](#)
[AWS Resilience Hub](#)

Resources

[EC2 Global view](#)

You are using the following Amazon EC2 resources in the US East (N. Virginia) Region:

| | | | | | |
|---------------------|---|-----------------|----|----------------|---|
| Instances (running) | 0 | Dedicated Hosts | 0 | Elastic IPs | 0 |
| Instances | 0 | Key pairs | 1 | Load balancers | 0 |
| Placement groups | 0 | Security groups | 18 | Snapshots | 0 |
| Volumes | 0 | | | | |

Easily size, configure, and deploy Microsoft SQL Server Always On availability groups on AWS using the AWS Launch Wizard for SQL Server. [Learn more](#)

Launch instance

To get started, launch an Amazon EC2 instance, which is a virtual server in the cloud.

[Launch instance ▾](#)

[Migrate a server](#)

Note: Your instances will launch in the US East (N. Virginia) Region

Service health

[AWS Health Dashboard](#)

Region
US East (N. Virginia)

Status
 This service is operating normally

Zones

- AMI: Amazon Machine Image
 - Image: the software on a computer at any given time
 - You can choose between OS, packages, etc.

▼ **Application and OS Images (Amazon Machine Image)** [Info](#)

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

Quick Start



Amazon
Linux
aws



macOS
Mac



Ubuntu
ubuntu®



Windows
Microsoft



Red Hat
Red Hat

S >



[Browse more AMIs](#)
Including AMIs from AWS, Marketplace and the Community

Amazon Machine Image (AMI)

Amazon Linux 2 AMI (HVM) - Kernel 5.10, SSD Volume Type

ami-026b57f3c383c2eec (64-bit (x86)) / ami-0636eac5d73e0e5d7 (64-bit (Arm))

Virtualization: hvm ENA enabled: true Root device type: ebs

Free tier eligible

Description

Amazon Linux 2 Kernel 5.10 AMI 2.0.20220912.1 x86_64 HVM gp2

Architecture
AMI ID

Deep Learning

Quickstart AMIs (8) My AMIs (0) AWS Marketplace AMIs (151) Community AMIs (500)

Refine results

Clear all filters

Free tier only Info

▼ OS category

All Linux/Unix

All Windows

▼ Architecture

64-bit (Arm)

32-bit (x86)

64-bit (x86)

64-bit (Mac)

64-bit (Mac-Arm)

Deep Learning (8 filtered, 8 unfiltered)

ubuntu Deep Learning AMI GPU PyTorch 1.12.0 (Ubuntu 20.04) 20220913
ami-0d43a67c3fe97770e (64-bit (x86))
Ubuntu Verified provider Select 64-bit (x86)

ubuntu Deep Learning AMI GPU TensorFlow 2.10.0 (Ubuntu 20.04) 20220918
ami-0e892d097b35bb3f9 (64-bit (x86))
Ubuntu Verified provider Select 64-bit (x86)

ubuntu Deep Learning AMI GPU PyTorch 1.11.0 (Ubuntu 20.04) 20220912
ami-0a87ebd3f73e7d2d1 (64-bit (x86))
Ubuntu Verified provider Select 64-bit (x86)

ubuntu Deep Learning AMI GPU TensorFlow 2.9.2 (Ubuntu 20.04) 20220920

- Instances:
 - Differences instances have differing numbers of cpus, memory, and access to GPU's
- Src:
 - <https://docs.aws.amazon.com/dlami/latest/devguide/gpu.html>
- Note: some AMI's work with certain instances

▼ Instance type [Info](#)

Instance type

| Instance Type | Free tier eligible |
|---------------|--------------------|
| t2.micro | Free tier eligible |
| p3.2xlarge | |
| p3.8xlarge | |
| p3.16xlarge | |
| n3dn 24xlarge | |

[Compare instance types](#)

p3| [X](#)

Selected key pair before you launch [Create new key pair](#)

P3 instances are the latest generation of general purpose GPU instances.

- Instances Types:

- Many types of instances; huge diversity in resources
- <https://aws.amazon.com/ec2/instance-types/>

Features:

- Up to 8 NVIDIA Tesla V100 GPUs, each pairing 5,120 CUDA Cores and 640 Tensor Cores
- High frequency Intel Xeon E5-2686 v4 (Broadwell) processors for p3.2xlarge, p3.8xlarge, and p3.16xlarge.
- High frequency 2.5 GHz (base) Intel Xeon P-8175M processors for p3dn.24xlarge.
- Supports NVLink for peer-to-peer GPU communication
- Provides up to 100 Gbps of aggregate network bandwidth within a Placement Group.

| Model | GPUs | vCPU | Mem (GiB) | GPU Mem (GiB) | GPU P2P | Storage (GiB) | Dedicated EBS Bandwidth | Networking Performance |
|---------------|------|------|-----------|---------------|---------|---------------|-------------------------|------------------------|
| p3.2xlarge | 1 | 8 | 61 | 16 | - | EBS-Only | 1.5 Gbps | Up to 10 Gigabit |
| p3.8xlarge | 4 | 32 | 244 | 64 | NVLink | EBS-Only | 7 Gbps | 10 Gigabit |
| p3.16xlarge | 8 | 64 | 488 | 128 | NVLink | EBS-Only | 14 Gbps | 25 Gigabit |
| p3dn.24xlarge | 8 | 96 | 768 | 256 | NVLink | NVMe SSD | 14 Gbps | 100 Gigabit |

▼ Key pair (login) [Info](#)

You can use a key pair to securely connect to your instance. Ensure that you have access to the selected key pair before you launch the instance.

Key pair name - *required*

Select



Proceed without a key pair (Not recommended)

Default value

udaikars_keypair

Type: rsa

Create new key pair

Edit

▼ Network settings [Info](#)

[Edit](#)

Network [Info](#)

vpc-0ead5703774229cda

Subnet [Info](#)

No preference (Default subnet in any availability zone)

Auto-assign public IP [Info](#)

Enable

Firewall (security groups) [Info](#)

A security group is a set of firewall rules that control the traffic for your instance. Add rules to allow specific traffic to reach your instance.

Create security group

Select existing security group

We'll create a new security group called '**launch-wizard-15**' with the following rules:

Allow SSH traffic from

Helps you connect to your instance

Anywhere

0.0.0.0/0



Allow HTTPs traffic from the internet

To set up an endpoint, for example when creating a web server

Allow HTTP traffic from the internet

To set up an endpoint, for example when creating a web server

⚠️ Rules with source of 0.0.0.0/0 allow all IP addresses to access your instance. We recommend setting [X](#) security group rules to allow access from known IP addresses only.

▼ Configure storage [Info](#)

[Advanced](#)

1x

45



GiB

gp3



Root volume

Free tier eligible customers can get up to 30 GB of EBS General Purpose (SSD) or Magnetic storage X

[Add new volume](#)

The selected AMI contains more instance store volumes than the instance allows. Only the first 0 instance store volumes from the AMI will be accessible from the instance

0 x File systems

[Edit](#)

▼ Advanced details [Info](#)

Purchasing option [Info](#)

Request Spot Instances

[Customize](#)

Request Spot Instances at the Spot price, capped at the On-Demand price

Domain join directory [Info](#)

Select



 [Create new directory](#)


IAM instance profile [Info](#)

Select



 [Create new IAM profile](#)


Hostname type [Info](#)

IP name





Success

Successfully initiated launch of instance ([i-0c4fcda9897cf80](#))

▶ [Launch log](#)

Next Steps

Get notified of estimated charges

[Create billing alerts](#) to get an email notification when estimated charges on your AWS bill exceed an amount you define (for example, if you exceed the free usage tier)

How to connect to your instance

Your instance is launching and it might be a few minutes until it is in the running state, when it will be ready for you to use

Click [View Instances](#) to monitor your instance's status. Once your instance is in the 'running' state, you can connect to it from the Instances screen. Find out [how to connect to your instance](#)

[View more resources to get you started](#)

[View all instances](#)



Services ▾

Resource Groups ▾



bifei ▾

Global ▾

Support ▾

Support Center

Account number: 061925049707

Support plan: Basic [Change](#) | [View support plans](#)

Support

My support cases

Health events 0

Recent cases sorted by created date.

[Create case](#)

| Subject | Case ID | Created (UTC-5) | Severity | Status |
|-------------------------------|----------------------------|------------------|------------------|----------|
| Limit Increase: EC2 Instances | 5317959411 | 2018-08-27T09:42 | General question | Resolved |

[View all support cases](#)

Recommended videos



Recommended for you

[How do I transfer ownership of an Amazon EC2 instance to a different AWS account?](#)[How do I troubleshoot problems using Remote Desktop to connect to my Amazon EC2 Windows instance?](#)[How do I troubleshoot problems connecting to my EC2 Linux instance using SSH?](#)[How do I transfer ownership of Amazon S3 objects to a different AWS account?](#)[I no longer need an AWS account and its resources. What action should I take?](#)[How do I make sure I don't incur charges when using the Free Tier?](#)[How do I purchase an Amazon EC2 Reserved Instance?](#)

Popular services tagged in articles

EC2

Account / Billing

RDS

ELB

Lambda

[View all Knowledge Center Articles](#)

EC2



Services ▾ Resource Groups ▾

bifei ▾ N. Virginia ▾ Support ▾

EC2 Dashboard

Events

Tags

Reports

Limits

Instances

Instances

Launch Templates

Spot Requests

Reserved Instances

Dedicated Hosts

Scheduled Instances

Capacity Reservations

Images

AMIs

Bundle Tasks

ELASTIC BLOCK STORE

Volumes

Snapshots

Lifecycle Manager

NETWORK & SECURITY

Security Groups

Elastic IPs

Placement Groups

Key Pairs

Launch Instance

Connect

Actions ▾

Filter by tags and attributes or search by keyword

?

K < 1 to 1 of 1 > X

| Name | Instance ID | Instance Type | Availability Zone | Instance State | Status Checks | Alarm Status | Public DNS (IPv4) | IPv4 Public IP |
|------|---------------------|---------------|-------------------|----------------------|---------------------------|-------------------|-------------------------|----------------|
| | i-0db10699cc1b8ce79 | p2.xlarge | us-east-1e | running | Initializing | None | ec2-52-91-128-137.co... | 52.91.128.137 |

Instance: i-0db10699cc1b8ce79 Public DNS: ec2-52-91-128-137.compute-1.amazonaws.com



Description

Status Checks

Monitoring

Tags

| | | | |
|-------------------|--|-----------------------|---|
| Instance ID | i-0db10699cc1b8ce79 | Public DNS (IPv4) | ec2-52-91-128-137.compute-1.amazonaws.com |
| Instance state | running | IPv4 Public IP | 52.91.128.137 |
| Instance type | p2.xlarge | IPv6 IPs | - |
| Elastic IPs | | Private DNS | ip-172-31-78-151.ec2.internal |
| Availability zone | us-east-1e | Private IPs | 172.31.78.151 |
| Security groups | launch-wizard-1 . view inbound rules . view outbound rules | Secondary private IPs | |
| Scheduled events | No scheduled events | VPC ID | vpc-f94c9d83 |
| AMI ID | Deep Learning AMI (Ubuntu) Version 21.2 (ami-0d96d570269578cd7) | Subnet ID | subnet-c1da12ff |
| Platform | - | Network interfaces | eth0 |

Key Pairs



EC2

EC2 Dashboard

Events

Tags

Reports

Limits

INSTANCES

Instances

Launch Templates

Spot Requests

Reserved Instances

Dedicated Hosts

Scheduled Instances

Capacity Reservations

IMAGES

AMIs

Bundle Tasks

ELASTIC BLOCK STORE

Volumes

Snapshots

NETWORK & SECURITY

Security Groups

Elastic IPs

Placement Groups

Key Pairs

Network Interfaces

LOAD BALANCING

Load Balancers

Request Spot Instances

Actions

Pricing History

Savings Summary



Request type: all

State: all

Search by keyword

< Viewing 1 to 1 of 1 requests >

| <input type="checkbox"/> | Request Id | Request type | Instance type | State | Capacity | Status | Persistence | Created | Max price |
|--------------------------|--------------|--------------|---------------|---------------------|-------------------|-----------|-------------|--------------------|-----------|
| <input type="checkbox"/> | sir-akmr6ypg | instance | p2.xlarge | active | i-0db10699cc1b... | fulfilled | one-time | a few seconds a... | \$1 |

Select a Spot request above to see more details

Instance summary for i-0c4fcdacd9897cf80

[Info](#)

Updated less than a minute ago



Connect

Instance state ▾

Actions ▾

Instance ID

[i-0c4fcdacd9897cf80](#)

IPv6 address

-

Hostname type

IP name: ip-172-31-93-53.ec2.internal

Answer private resource DNS name

IPv4 (A)

Auto-assigned IP address

[3.83.86.238 \[Public IP\]](#)

IAM Role

-

Public IPv4 address

[3.83.86.238 | open address](#)

Instance state

[Running](#)

Private IP DNS name (IPv4 only)

[ip-172-31-93-53.ec2.internal](#)

Instance type

t2.micro

VPC ID

[vpc-0ead5703774229cda](#)

Subnet ID

[subnet-0c5fcf81893ca7ed9](#)

Private IPv4 addresses

[172.31.93.53](#)

Public IPv4 DNS

[ec2-3-83-86-238.compute-1.amazonaws.com | open address](#)

Elastic IP addresses

-

AWS Compute Optimizer finding

[Opt-in to AWS Compute Optimizer for recommendations.](#) |[Learn more](#)

Auto Scaling Group name

-

[Details](#)[Security](#)[Networking](#)[Storage](#)[Status checks](#)[Monitoring](#)[Tags](#)[▼ Instance details](#) [Info](#)

Platform

[Amazon Linux \(Inferred\)](#)

Platform details

[Linux/UNIX](#)

Stop protection

Disabled

Instance auto-recovery

AMI ID

[ami-026b57f3c383c2eec](#)

AMI name

[amzn2-ami-kernel-5.10-hvm-2.0.20220912.1-x86_64-gp2](#)

Launch time

[Mon Sep 26 2022 22:13:36 GMT-0400 \(Eastern Daylight Time\) \(3 minutes\)](#)

Lifecycle

Monitoring
disabledTermination protection
Disabled

AMI location

[amazon/amzn2-ami-kernel-5.10-hvm-2.0.20220912.1-x86_64-gp2](#)

Stop-hibernate behavior

Connect to instance Info

Connect to your instance i-0c4fcdacd9897cf80 using any of these options

EC2 Instance Connect

Session Manager

SSH client

EC2 serial console

Instance ID

[i-0c4fcdacd9897cf80](#)

1. Open an SSH client.
2. Locate your private key file. The key used to launch this instance is `udaikars_keypair.pem`
3. Run this command, if necessary, to ensure your key is not publicly viewable.
 `chmod 400 udaikars_keypair.pem`
4. Connect to your instance using its Public DNS:
 `ec2-3-83-86-238.compute-1.amazonaws.com`

Example:

`ssh -i "██████████" ec2-user@ec2-3-83-86-238.compute-1.amazonaws.com`

i **Note:** In most cases, the guessed user name is correct. However, read your AMI usage instructions to check if the AMI owner has changed the default AMI user name.

Cancel

EC2

- Training may take a long time
- Using tmux to keep the code running
- AWS might kill spot instances
- You could use EBS
- Keep saving your models

```
x  ubuntu@ip-172-31-68-214: ~

Get cloud support with Ubuntu Advantage Cloud Guest:
http://www.ubuntu.com/business/services/cloud

5 packages can be updated.
0 updates are security updates.

The programs included with the Ubuntu system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*copyright.

Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by
applicable law.

ubuntu@ip-172-31-68-214:~$ ls
anaconda2 anaconda3 examples Nvidia_Cloud_EULA.pdf README src tutorials
ubuntu@ip-172-31-68-214:~$ conda env list
# conda environments: -----
#
base          * /home/ubuntu/anaconda3
amazonei_mxnet_p27   /home/ubuntu/anaconda3/envs/amazonei_mxnet_p27
amazonei_mxnet_p36   /home/ubuntu/anaconda3/envs/amazonei_mxnet_p36
amazonei_tensorflow_p27  /home/ubuntu/anaconda3/envs/amazonei_tensorflow_p27
amazonei_tensorflow_p36  /home/ubuntu/anaconda3/envs/amazonei_tensorflow_p36
caffe2_p27      /home/ubuntu/anaconda3/envs/caffe2_p27
caffe_p27       /home/ubuntu/anaconda3/envs/caffe_p27
caffe_p35       /home/ubuntu/anaconda3/envs/caffe_p35
chainer_p27     /home/ubuntu/anaconda3/envs/chainer_p27
chainer_p36     /home/ubuntu/anaconda3/envs/chainer_p36
cntk_p27       /home/ubuntu/anaconda3/envs/cntk_p27
cntk_p36       /home/ubuntu/anaconda3/envs/cntk_p36
mxnet_p27      /home/ubuntu/anaconda3/envs/mxnet_p27
mxnet_p36      /home/ubuntu/anaconda3/envs/mxnet_p36
python2         /home/ubuntu/anaconda3/envs/python2
python3         /home/ubuntu/anaconda3/envs/python3
pytorch_p27    /home/ubuntu/anaconda3/envs/pytorch_p27
pytorch_p36    /home/ubuntu/anaconda3/envs/pytorch_p36
tensorflow_p27 /home/ubuntu/anaconda3/envs/tensorflow_p27
tensorflow_p36 /home/ubuntu/anaconda3/envs/tensorflow_p36
theano_p27     /home/ubuntu/anaconda3/envs/theano_p27
theano_p36     /home/ubuntu/anaconda3/envs/theano_p36

ubuntu@ip-172-31-68-214:~$ source activate pytorch_p36
(pytorch_p36) ubuntu@ip-172-31-68-214:~$ python
impoPython 3.6.5 |Anaconda custom (64-bit)| (default, Apr 29 2018, 16:14:56)
[GCC 7.2.0] on linux
Type "help", "copyright", "credits" or "license" for more information.
>>> import torch
>>> -----
```

EC2

AWS Services Resource Groups Actions

EC2 Dashboard Events Tags Reports Limits

INSTANCES Instances Launch Templates Spot Requests Reserved Instances Dedicated Hosts Scheduled Instances Capacity Reservations

IMAGES AMIs Bundle Tasks

ELASTIC BLOCK STORE Volumes Snapshots Lifecycle Manager

NETWORK & SECURITY Security Groups Elastic IPs Placement Groups Kev Pairs

Launch Instance Connect Actions

Filter by tags and attributes or search

Name Instance ID i-0db10699cc1b8ce79

Availability Zone Instance State Status Checks Alarm Status Public DNS (IPv4) IPv4 Public IP

running 2/2 checks ... None ec2-52-91-128-137.co... 52.91.128.137

Actions: Connect, Get Windows Password, Create Template From Instance, Launch More Like This, Instance State (Start, Stop, Stop - Hibernate, Reboot, Terminate), Instance Settings, Image, Networking, CloudWatch Monitoring.

Instance: i-0db10699cc1b8ce79 Public DNS: ec2-52-91-128-137.compute-1.amazonaws.com

| Description | Status Checks | Monitoring | Tags |
|-------------------|--|-----------------------|---|
| Instance ID | i-0db10699cc1b8ce79 | Public DNS (IPv4) | ec2-52-91-128-137.compute-1.amazonaws.com |
| Instance state | running | IPv4 Public IP | 52.91.128.137 |
| Instance type | p2.xlarge | IPv6 IPs | - |
| Elastic IPs | | Private DNS | ip-172-31-78-151.ec2.internal |
| Availability zone | us-east-1e | Private IPs | 172.31.78.151 |
| Security groups | launch-wizard-1 , view inbound rules , view outbound rules | Secondary private IPs | |
| Scheduled events | No scheduled events | VPC ID | vpc-f94c9d83 |
| AMI ID | Deep Learning AMI (Ubuntu) Version 21.2 (ami-0d96d570269578cd7) | Subnet ID | subnet-c1da12ff |
| Platform | - | Network interfaces | eth0 |

Connect

Connect to your instances

EC2 Instances

Instance ID

[i-0c4f0](#)

1. Open a terminal

2. Locate the instance ID

3. Run this command

[curl http://169.254.169.254/latest/meta-data/instan](#)

4. Connect to the instance

[ssh -i "ec2-user@i-0c4f0"](#)

Example:

[ssh -i "ec2-user@i-0c4f0"](#)**Not** the right instance?**Services** (7)**Features** (8)

Blogs (2,071)

Documentation (7,863)

Knowledge Articles (30)

Tutorials (8)**Events** (33)

Marketplace (453)

Search results for 'billing'

Services[See all 7 results ▶](#)**Billing**

Access, analyze, and control your AWS costs and usage.

**AWS Billing Conductor** ☆

Simplifying your billing practice

**IoT TwinMaker** ☆

Easily create digital twins of real-world systems to optimize operations

**Kinesis** ☆

Work with Real-Time Streaming Data

Features[See all 8 results ▶](#)**Customer Carbon Footprint Tool**

↳ Billing feature

Orders and invoices

↳ Billing feature

Payment methods

↳ Billing feature

Billing



Services ▾

Resource Groups ▾



bifel ▾

Global ▾

Support ▾

Home

Cost Management

Cost Explorer

Budgets

Cost & Usage Reports

Cost Allocation Tags

Billing

Bills

Payment History

Credits

Preferences

Billing preferences

Payment Methods

Consolidated Billing

Tax Settings

Bills

Date: February 2019

Download CSV

Print



Estimated Total

\$0.00

Credits

▶ Credits

Your invoiced total will be displayed once an invoice is issued.

+ Expand All

Details

AWS Service Charges

\$0.00

▶ Data Transfer

\$0.00

▶ Elastic Compute Cloud

\$0.00

Usage and recurring charges for this statement period will be charged on your next billing date. Estimated charges shown on this page, or shown on any notifications that we send to you, may differ from your actual charges for this statement period. This is because estimated charges presented on this page do not include usage charges accrued during this statement period after the date you view this page. Similarly, information about estimated charges sent to you in a notification do not include usage charges accrued during this statement period after the date we send you the notification. One-time fees and subscription charges are assessed separately from usage and reoccurring charges, on the date that they occur.

[Home](#)[Billing](#)[Bills](#)[Payments](#)[Credits](#)[Purchase orders](#)[Cost & Usage Reports](#)[Cost Categories](#)[Cost allocation tags](#)[Free Tier](#)[Billing Conductor](#) [Cost Management](#)[Cost Explorer](#)[Budgets](#)[Budgets Reports](#)[Savings Plans](#) [Preferences](#)[Billing preferences](#)[Payment methods](#)[Consolidated billing](#) [Tax settings](#)[AWS Billing](#)  [Credits](#)

Credits Info

[Redeem credit](#)

Monday, September 26, 2022 at 10:19:58 PM EDT

[Credits](#)[Last 6 months of inactive credits](#)

Summary

Total amount remaining

\$269.43

Total amount used

\$30.57

Active credits

4

Credits Info

 [Find a credit](#)   

| Expiration date | Credit name | Amount used | Amount remaining | Applicable products |
|-----------------|------------------------------------|-------------|------------------|---|
| 10/31/2023 | Carnegie Mellon University | \$0.00 | \$50.00 | See complete list of services |
| 10/31/2023 | Carnegie Mellon University | \$0.00 | \$50.00 | See complete list of services |
| 01/31/2023 | EDU_E2W_FY2022_CC_Q3_09_CMU_150USD | \$0.00 | \$150.00 | See complete list of services |
| 12/31/2022 | EDU_E2W_FY2022_CC_Q2_04_CMU_50USD | \$30.57 | \$19.43 | See complete list of services |

Questions?