The background is a light blue gradient with several realistic water droplets of various sizes scattered across the surface. The droplets have highlights and shadows, giving them a three-dimensional appearance.

AMAZON WEB SERVICE (AWS)

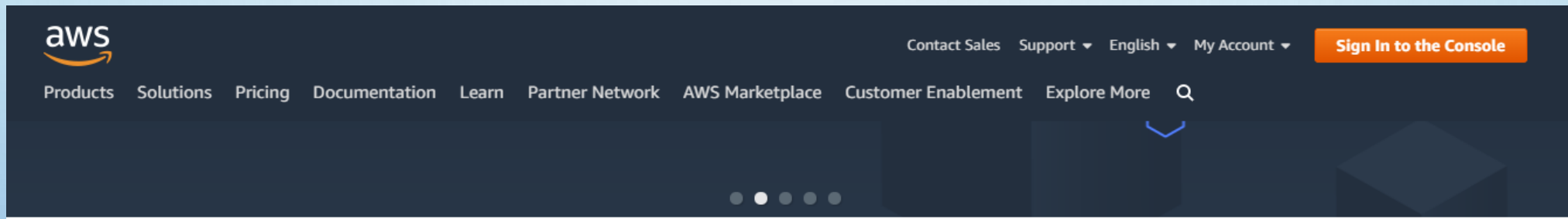
BY MUNTABIR CHOUDHURY

ACCOUNT SET UP

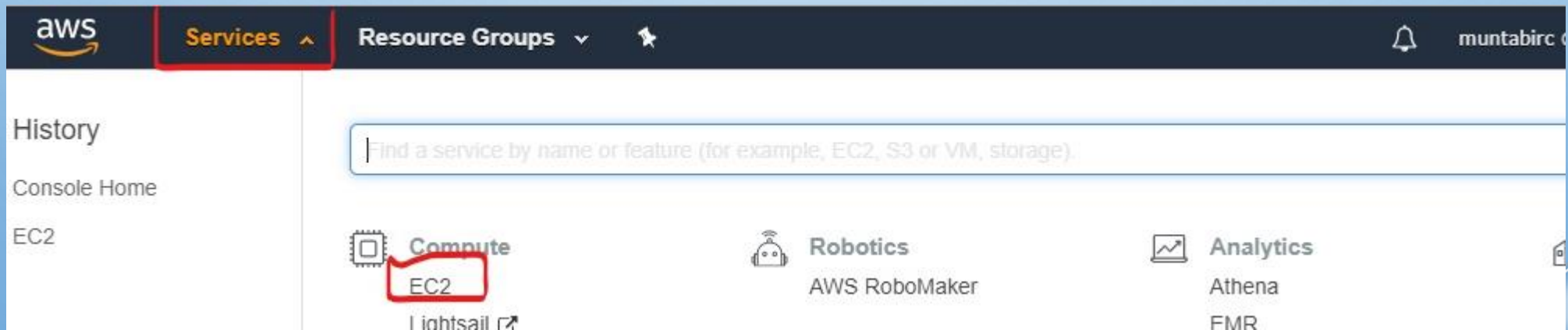
- OPEN A BROWSER AND GO TO [AWS](https://aws.amazon.com/)
- OPEN A FREE TIER ACCOUNT FOR 12 MONTHS
- AWS WILL ASK YOU TO PUT YOUR CREDIT CARD INFORMATION BUT DO NOT WORRY SINCE IT IS A FREE TIER ACCOUNT
- BEFORE 12 MONTHS YOU CAN CANCEL YOUR SUBSCRIPTION

EC2 INSTANCE

- SIGN INTO AWS MANAGEMENT CONSOLE

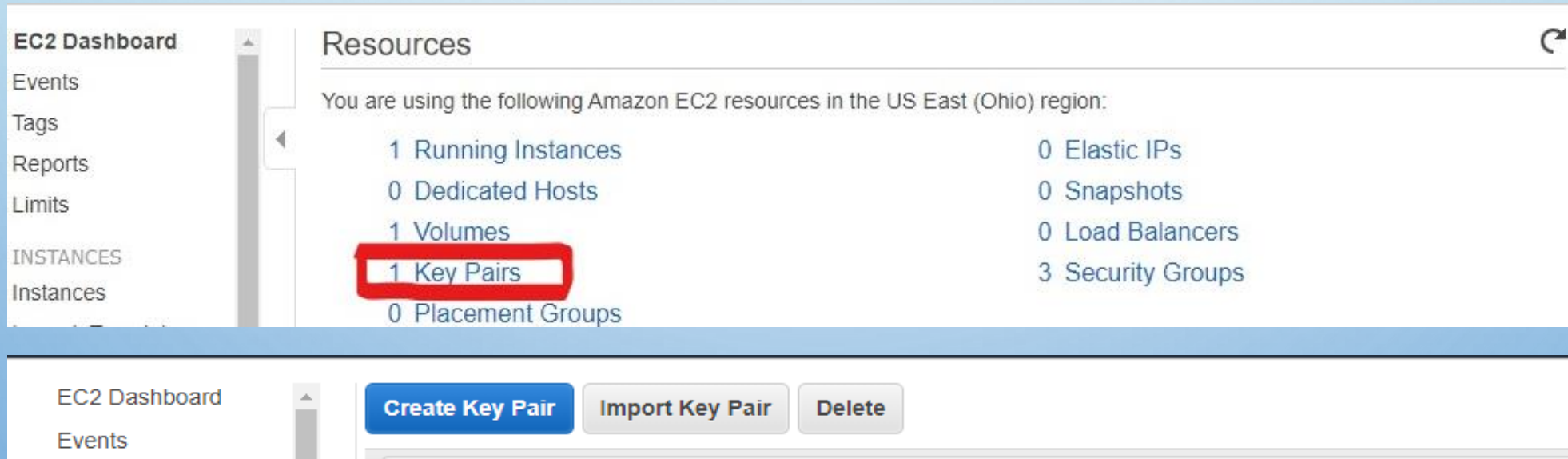


- CLICK ON SERVICES AND SELECT 'EC2'



EC2 INSTANCE DASHBOARD

- CLICK ON KEY PAIRS AND CREATE A NEW KEY PAIR. IT WILL SAVED BE AS <YOUR_SELECTED_NAME>.PEM FILE IN YOUR COMPUTER



The screenshot displays the Amazon EC2 Dashboard interface. On the left, a navigation sidebar lists various sections: EC2 Dashboard, Events, Tags, Reports, Limits, INSTANCES, and Instances. The main content area, titled 'Resources', shows a summary of EC2 resources in the US East (Ohio) region. The resources listed are: 1 Running Instances, 0 Dedicated Hosts, 1 Volumes, 1 Key Pairs (highlighted with a red box), 0 Placement Groups, 0 Elastic IPs, 0 Snapshots, 0 Load Balancers, and 3 Security Groups. Below the dashboard, a row of buttons is visible: 'Create Key Pair' (in blue), 'Import Key Pair' (in grey), and 'Delete' (in grey).

Resource Type	Count
Running Instances	1
Dedicated Hosts	0
Volumes	1
Key Pairs	1
Placement Groups	0
Elastic IPs	0
Snapshots	0
Load Balancers	0
Security Groups	3

KEY PAIRS CONVERSION

- IF YOU ARE A MAC USER, YOU WILL NOT NEED TO CONVERT THE .PEM FILE (KEY PAIRS)
- IF YOU ARE A WINDOWS USER, YOU WILL NEED TO CONVERT THE .PEM FILE TO .PPK FILE USING 'PUTTY GEN'
- CLICK ON THE [HYPERLINK](#) FOR A COMPLETE GUIDE ON HOW TO CONVERT THE .PEM FILE TO .PPK FILE AND PERFORM SSH

CREATE AN INSTANCE

- CLICK ON LAUNCH INSTANCE AND SELECT THE FREE TIER ON THE LEFT NAVIGATION PANE

The screenshot displays the AWS Management Console interface for creating an EC2 instance. On the left, the navigation pane shows 'INSTANCES' expanded, with 'Free tier only' selected. The main content area features the 'Create Instance' tab, which includes a 'Launch Instance' button and a list of available AMIs. The first AMI listed is 'Amazon Linux 2 AMI (HVM), SSD Volume Type', which is marked as 'Free tier eligible'. The second AMI is 'Amazon Linux AMI 2018.03.0 (HVM), SSD Volume Type'.

Left Navigation Pane:

- Tags
- Reports
- Limits
- INSTANCES**
 - Instances
 - Launch Templates

Create Instance Tab:

To start using Amazon EC2 you will want to launch a virtual server, known as an Amazon EC2 instance.

Launch Instance

Migrate a Machine

Use CloudEndure Migration to simplify, expect automate large-scale migrations from physical cloud-based infrastructure to AWS.

[Get started with CloudEndure Migration](#)

My AMIs

AWS Marketplace

Community AMIs

- ☒ Free tier only ⓘ

Amazon Linux 2 AMI (HVM), SSD Volume Type - ami-00c03f7f7f2ec15c3 (64-bit x86) / ami-014d175d64de0a174 (Arm)

Free tier eligible

Amazon Linux 2 comes with five years support. It provides Linux kernel 4.14 tuned for optimal performance on Amazon EC2, systemd GCC 7.3, Glibc 2.26, Binutils 2.29.1, and the latest software packages through extras.

Root device type: ebs Virtualization type: hvm ENA Enabled: Yes

Amazon Linux AMI 2018.03.0 (HVM), SSD Volume Type - ami-0c64dd618a49ae8

Amazon Linux

The Amazon Linux AMI is an EBS-backed, AWS-supported image. The default image includes AWS command line tools, Python, Ruby

LAUNCH INSTANCE

- CHOOSE YOUR FAVORITE MACHINE IMAGE BASED ON THE OS (64 BIT, 32BIT) YOUR MACHINE IS RUNNING.
- PREFERABLY SELECT UBUNTU 18.04 64BIT IMAGE.



Amazon Linux
Free tier eligible

Amazon Linux AMI 2018.03.0 (HVM), SSD Volume Type - ami-0c64dd618a49aeee8

The Amazon Linux AMI is an EBS-backed, AWS-supported image. The default image includes AWS command line tools, Python, Ruby, Perl, and Java. The repositories include Docker, PHP, MySQL, PostgreSQL, and other packages.

Root device type: ebs Virtualization type: hvm ENA Enabled: Yes

Select

64-bit (x86)



Red Hat
Free tier eligible

Red Hat Enterprise Linux 8 (HVM), SSD Volume Type - ami-0520e698dd500b1d1 (64-bit x86) / ami-0099847d600887c9f (64-bit Arm)

Red Hat Enterprise Linux version 8 (HVM), EBS General Purpose (SSD) Volume Type

Root device type: ebs Virtualization type: hvm ENA Enabled: Yes

Select

☒ 64-bit (x86)
☐ 64-bit (Arm)



SUSE Linux
Free tier eligible

SUSE Linux Enterprise Server 15 SP1 (HVM), SSD Volume Type - ami-0e0bae59dc35fe89a (64-bit x86) / ami-0b49a8f443e46ff20 (64-bit Arm)

SUSE Linux Enterprise Server 15 Service Pack 1 (HVM), EBS General Purpose (SSD) Volume Type. Public Cloud, Advanced Systems Management, Web and Scripting, and Legacy modules enabled.

Root device type: ebs Virtualization type: hvm ENA Enabled: Yes

Select

☒ 64-bit (x86)
☐ 64-bit (Arm)



Free tier eligible

Ubuntu Server 18.04 LTS (HVM), SSD Volume Type - ami-05c1fa8df71875112 (64-bit x86) / ami-0606a0d9f566249d3 (64-bit Arm)

Ubuntu Server 18.04 LTS (HVM), EBS General Purpose (SSD) Volume Type. Support available from Canonical (<http://www.ubuntu.com/cloud/services>).

Root device type: ebs Virtualization type: hvm ENA Enabled: Yes

Select

☒ 64-bit (x86)
☐ 64-bit (Arm)

LAUNCH INSTANCE CONT..

Step 2: Choose an Instance Type

Amazon EC2 provides a wide selection of instance types optimized to fit different use cases. Instances are virtual servers that can run applications. They have varying combinations of CPU, memory, storage, and networking capacity, and give you the flexibility to choose the appropriate mix of resources for your applications. [Learn more](#) about instance types and how they can meet your computing needs.

Filter by: All instance types Current generation [Show/Hide Columns](#)

Currently selected: t2.micro (Variable ECUs, 1 vCPUs, 2.5 GHz, Intel Xeon Family, 1 GiB memory, EBS only)

	Family	Type	vCPUs ⓘ	Memory (GiB)	Instance Storage (GB) ⓘ	EBS-Optimized Available ⓘ	Network Performance ⓘ	IPv6 Support ⓘ
<input type="checkbox"/>	General purpose	t2.nano	1	0.5	EBS only	-	Low to Moderate	Yes
<input checked="" type="checkbox"/>	General purpose	t2.micro Free tier eligible	1	1	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	General purpose	t2.small	1	2	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	General purpose	t2.medium	2	4	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	General purpose	t2.large	2	8	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	General purpose	t2.xlarge	4	16	EBS only	-	Moderate	Yes
<input type="checkbox"/>	General purpose	t2.2xlarge	8	32	EBS only	-	Moderate	Yes
<input type="checkbox"/>	General purpose	t3a.nano	2	0.5	EBS only	Yes	Up to 5 Gigabit	Yes
<input type="checkbox"/>	General purpose	t3a.micro	2	1	EBS only	Yes	Up to 5 Gigabit	Yes
<input type="checkbox"/>	General purpose	t3a.small	2	2	EBS only	Yes	Up to 5 Gigabit	Yes
<input type="checkbox"/>	General purpose	t3a.medium	2	4	EBS only	Yes	Up to 5 Gigabit	Yes

[Cancel](#)

[Previous](#)

[Review and Launch](#)

[Next: Configure Instance Details](#)

CONNECT YOUR INSTANCE

- ONCE YOU LAUNCHED YOUR INSTANCE,
- FOR WINDOWS USER –
 - CONNECT THE INSTANCE USING ‘PUTTY’
 - A [COMPLETE GUIDE](#) HAS BEEN GIVEN ON HOW TO CONNECT
 - HOWEVER, WHEN CONNECTING, USE THE “PUBLIC DNS / PUBLIC IP” FROM AWS AS A ‘HOST NAME’ ON PUTTY
 - KEEP THE PORT AS DEFAULT
 - CLICK ON OPEN
 - LOGIN AS “UBUNTU”

CONNECT YOUR INSTANCE CONT..

Launch Instance Connect Actions

Filter by tags and attributes or search by keyword

Name	Instance ID	Instance Type	Availability Zone	Instance State	Status Checks	Alarm Status	Public DNS (IPv4)	IPv4 Public IP	IPv6 IPs	Key Name
	i-03c7c2c4e7b066b24	t2.micro	us-east-2c	running	2/2 checks ...	None	ec2-18-222-188-28.us-east-2.compute.amazonaws.com	18.222.188.28	-	docker

Instance: i-03c7c2c4e7b066b24 Public DNS: ec2-18-222-188-28.us-east-2.compute.amazonaws.com

Description Status Checks Monitoring Tags

Instance ID: i-03c7c2c4e7b066b24
Instance state: running
Instance type: t2.micro
Elastic IPs: -
Public DNS (IPv4): ec2-18-222-188-28.us-east-2.compute.amazonaws.com
IPv4 Public IP: 18.222.188.28
Private DNS: ip-172-31-39-60.us-east-2.compute.internal

```
ubuntu@ip-172-31-39-60: ~  
login as: ubuntu  
Authenticating with public key "imported-openssh-key"  
Welcome to Ubuntu 18.04.2 LTS (GNU/Linux 4.15.0-1048-aws x86_64)  
  
* Documentation:  https://help.ubuntu.com  
* Management:    https://landscape.canonical.com  
* Support:        https://ubuntu.com/advantage
```

Basic options for your PuTTY session

Specify the destination you want to connect to

Host Name (or IP address) Port
ec2-18-222-188-28.us-east-2.compute.ar 22

Connection type:
☐ Raw ☐ Telnet ☐ Rlogin ☒ SSH ☐ Serial

Load, save or delete a stored session

Saved Sessions
docker

Default Settings
1LinuxServer
CS domain
Hubble
docker
linuxconnect

Load Save Delete

Close window on exit:
☐ Always ☐ Never ☒ Only on clean exit

About Help Open Cancel

Connect To Your Instance

I would like to connect with

- ☒ A standalone SSH client ⓘ
- ☐ EC2 Instance Connect (browser-based SSH connection) ⓘ
- ☐ A Java SSH Client directly from my browser (Java required) ⓘ

To access your instance:

1. Open an SSH client. (find out how to [connect using PuTTY](#))
2. Locate your private key file (docker.pem). The wizard automatically detects the key you used to launch the instance.
3. Your key must not be publicly viewable for SSH to work. Use this command if needed:

```
chmod 400 docker.pem
```

4. Connect to your instance using its Public DNS:

```
ec2-18-222-188-28.us-east-2.compute.amazonaws.com
```

Example:

```
ssh -i "docker.pem" ubuntu@ec2-18-222-188-28.us-east-2.compute.amazonaws.com
```

Please note that in most cases the username above will be correct, however please ensure that you read your AMI usage instructions to ensure that the AMI owner has not changed the default AMI username.

If you need any assistance connecting to your instance, please see our [connection documentation](#).

Close

CONNECT YOUR INSTANCE

- FOR MAC USER,
 - GO TO THE TERMINAL
 - CHANGE THE MODE OF THE .PEM FILE
 - THEN CONNECT TO THE INSTANCE WHICH HAS BEEN PROVIDED IN THE EXAMPLE

COPY YOUR DOCKERFILE AND ECHO FILE

- ONCE YOU LOGGED INTO THE INSTANCE,
 - IF YOU ARE A WINDOWS USER, YOU CAN USE [WINSCP](#) TO TRANSFER YOUR FILE FROM LOCAL TO REMOTE
 - IF YOU ARE A MAC USER, YOU CAN USE “SCP” COMMAND TO TRANSFER YOUR FILE FROM [LOCAL TO REMOTE](#)

SCP FILE.TXT [REMOTE USERNAME@10.10.0.2:/REMOTE/DIRECTORY](#)

- UPON TRANSFERRING THE FILES FROM LOCAL TO REMOTE
- IN THE EC2 INSTANCE, SIMPLY CHANGE THE DIRECTORY TO THE FOLDER WHICH CONTAINS THE DOCKER FILE AND BUILD THE IMAGE AND RUN YOUR ECHO SERVER

RUN ECHO SERVER AND DOCKER

```
ubuntu@ip-172-31-39-60:~$ cd Assignment/
ubuntu@ip-172-31-39-60:~/Assignment$ ls
Dockerfile  src
ubuntu@ip-172-31-39-60:~/Assignment$ docker build -t python-docker-dev .
Sending build context to Docker daemon  5.12kB
Step 1/7 : FROM python:3.6
--> 1c515a624542
Step 2/7 : WORKDIR /app
--> Using cache
--> d6f0dd07e6e2
Step 3/7 : COPY . /app/
--> Using cache
--> 29f929b922ae
Step 4/7 : COPY src /app
--> Using cache
--> a06d4d83e9c8
Step 5/7 : EXPOSE 80
--> Using cache
--> e2c614d5ba34
Step 6/7 : RUN chmod a+x echo-server.py
--> Using cache
--> e22103580def
Step 7/7 : CMD ["python", "echo-server.py"]
--> Using cache
--> 013dae87410c
Successfully built 013dae87410c
Successfully tagged python-docker-dev:latest
ubuntu@ip-172-31-39-60:~/Assignment$ docker run -d --name python-echoserver -p 80:80 python-docker-dev
d45f23bad387fa7d2cbcdfa16a77f0df7a0d55372809b989cf82f48dc515c74
ubuntu@ip-172-31-39-60:~/Assignment$ docker ps
CONTAINER ID        IMAGE               COMMAND                  CREATED              STATUS              PORTS               NAMES
d45f23bad387        python-docker-dev   "python echo-server...." 9 seconds ago       Up 7 seconds       0.0.0.0:80->80/tcp   python-echoserver
ubuntu@ip-172-31-39-60:~/Assignment$ cd src/
```