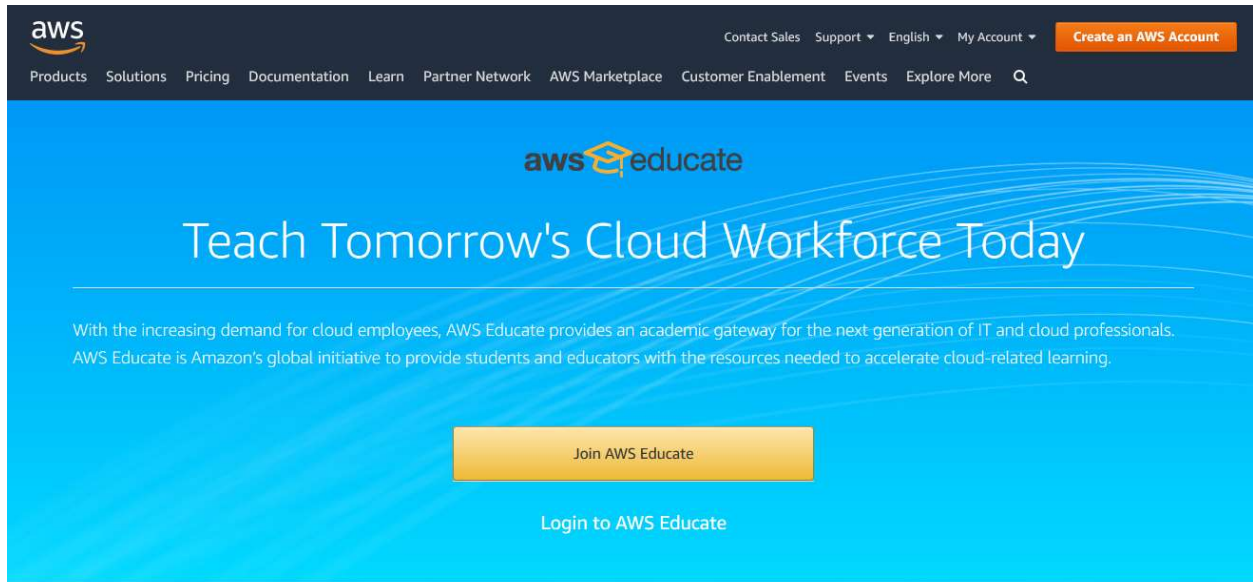


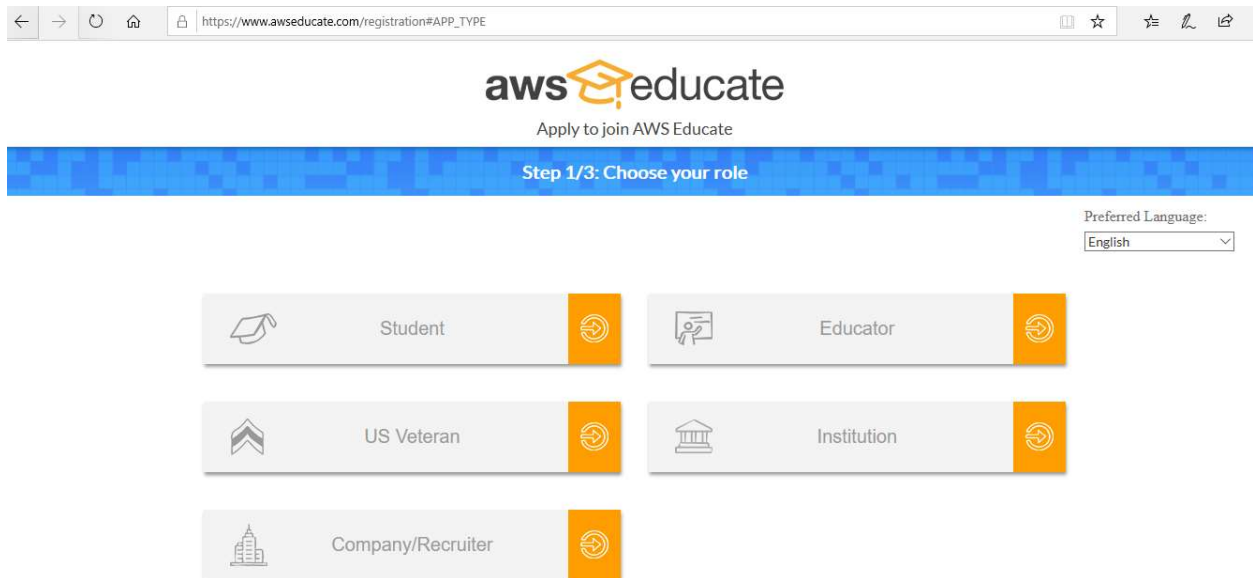
# Lab 01

## Steps to create Amazon Educate Student Account:

1. Go to <https://aws.amazon.com/education/awseducat/>



2. Click on Join AWS Educate, Select role as “Student”:



Please note that any personal information you provide will be treated in accordance with the [AWS Educate Terms and Conditions](#) and [AWS Privacy Notice](#)

### 3. Fill in all the personal details and Click “Next”:

← → ↻ 🏠 🔒 https://www.awseducate.com/registration#INFO-Student ☆ ☆ 🔍 ↻

**awseducate**  
Apply to join AWS Educate

**Step 2/3: Tell us about yourself**

Preferred Language: English

Stevens Institute of Technology  
Start typing the name of your school and select from the list. If you don't see your school, enter the full name, example: Harvard University

United States

Tehreem

Tungekar

ttungeka@stevens.edu  
Please provide a valid, current email issued by your Institution. Example: your\_name@your\_school.edu

05 2021

10 1992

Promo Code (optional)

[Frequently Asked Questions](#)

Please click the box below to help assure that a person and not an automated program is submitting this application. If a set of letters is displayed enter them on the line. If you have any difficulty with the letters, you can click the reload icon to get a new set of letters, or click the headphones to hear audio of

### 4. After some time, your account will be verified and you will receive a confirmation email from AWS Educate and your account will be activated:

← → ↻ 🏠 🔒 labs.vocareum.com/main/main.php?m=editor&nav=1&asid=14334&stepid=14335 ☆ ☆ 🔍 ↻

Apps 210-451 - Cisco Pra... Your Customized Te...

**vocareum** 🏠 ▼ My Classes Help ttungeka@stevens.edu

## Welcome to your AWS Educate Account

AWS Educate provides you with access to a wide variety of AWS Services for you to get your hands on and build on AWS! To get started, click on the AWS Console button to log in to your AWS console.

Please read the FAQ below to help you get started on your Starter Account.

- What are the list of services supported?
- What regions are supported with Starter Accounts or Classroom Accounts?
- I can't start any resources. What happened?
- Can I create users within my Starter or Classroom Account for others to access?
- Can I create my own IAM policy within Starter Account or Classroom?

## Your AWS Account Status

**Active**  
full access ( )

**\$100**  
remaining credits (estimated)

**2:60**  
session time

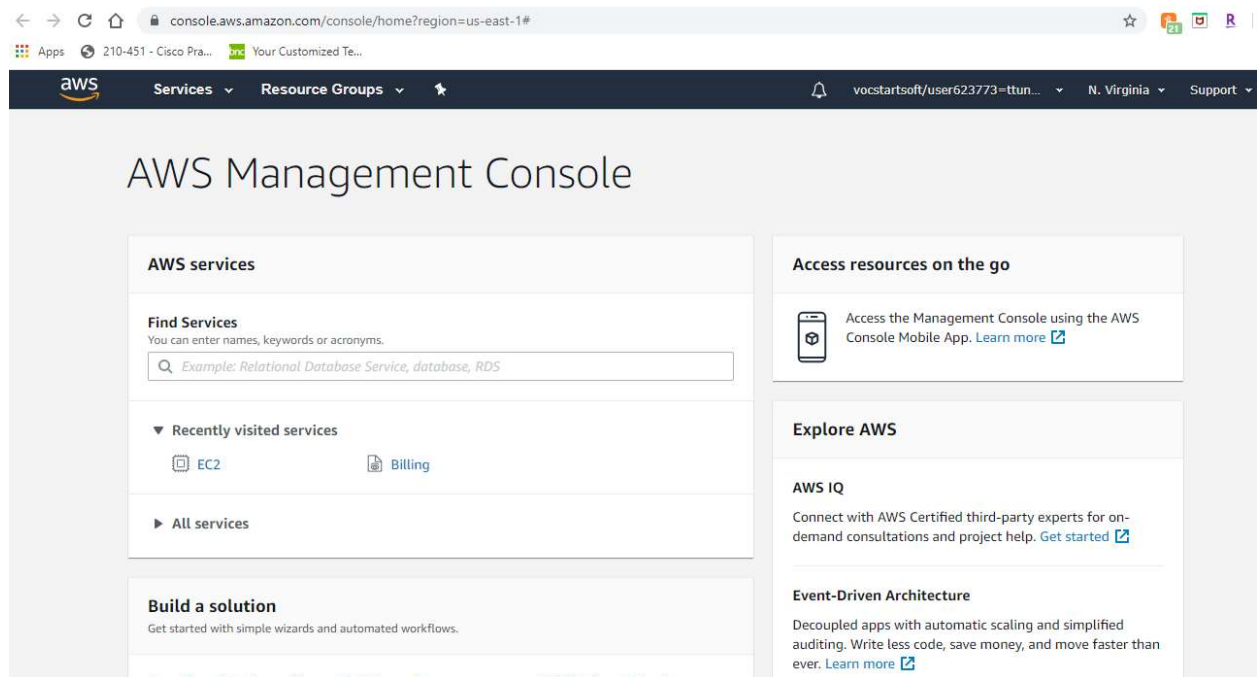
[Account Details](#) [AWS Console](#)

Please use AWS Educate Account responsibly. Remember to shut down your instances when not in use to make the best use of your credits. And, don't forget to logout once you are done with your work!

These are the steps to create a free AWS Account which shows I got \$100 credits remaining!

## Steps to create an EC2 instance with Amazon Machine Image (AMI): Basic 64-bit Amazon Linux AMI:

1. Login to your AWS Educate Account and go to AWS Management Console:



2. Under Services dropdown, select EC2 and the following screen appears, click “Launch Instance”:

aws Services Resource Groups vocstartsoft/user623773=ttun... N. Virginia Support

New EC2 Experience Learn more

**EC2 Dashboard** New

- Events
- Tags
- Reports
- Limits

INSTANCES

- Instances
- Instance Types
- Launch Templates New
- Spot Requests
- Savings Plans
- Reserved Instances
- Dedicated Hosts
- Scheduled Instances
- Capacity Reservations

IMAGES

- AMIs
- Bundle Tasks

**Welcome to the new EC2 console!**

We're redesigning the EC2 console to make it easier to use and improve performance. We'll release new screens periodically. We encourage you to try them and let us know where we can make improvements. To switch between the old console and the new console, use the New EC2 Experience toggle.

EC2

**Resources**

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

|                   |   |                 |   |
|-------------------|---|-----------------|---|
| Running instances | 0 | Elastic IPs     | 0 |
| Dedicated Hosts   | 0 | Snapshots       | 1 |
| Volumes           | 1 | Load balancers  | 0 |
| Key pairs         | 3 | Security groups | 5 |
| Placement groups  | 0 |                 |   |

**Account attributes**

Supported platforms

- VPC

Default VPC

vpc-cc0435b6

Console experiments

Settings

**Explore AWS**

Easily launch third-party AMIs

aws Services Resource Groups vocstartsoft/user623773=ttun... N. Virginia Support

New EC2 Experience Learn more

**EC2 Dashboard** New

- Events
- Tags
- Reports
- Limits

INSTANCES

- Instances
- Instance Types
- Launch Templates New
- Spot Requests
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- Dedicated Hosts
- Scheduled Instances
- Capacity Reservations

IMAGES

- AMIs
- Bundle Tasks

**Resources**

|                  |   |                 |   |
|------------------|---|-----------------|---|
| Volumes          | 1 | Load balancers  | 0 |
| Key pairs        | 3 | Security groups | 5 |
| Placement groups | 0 |                 |   |

**Launch instance**

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

**Launch Instance**

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

**Scheduled events**

vpc-cc0435b6

Console experiments

Settings

**Explore AWS**

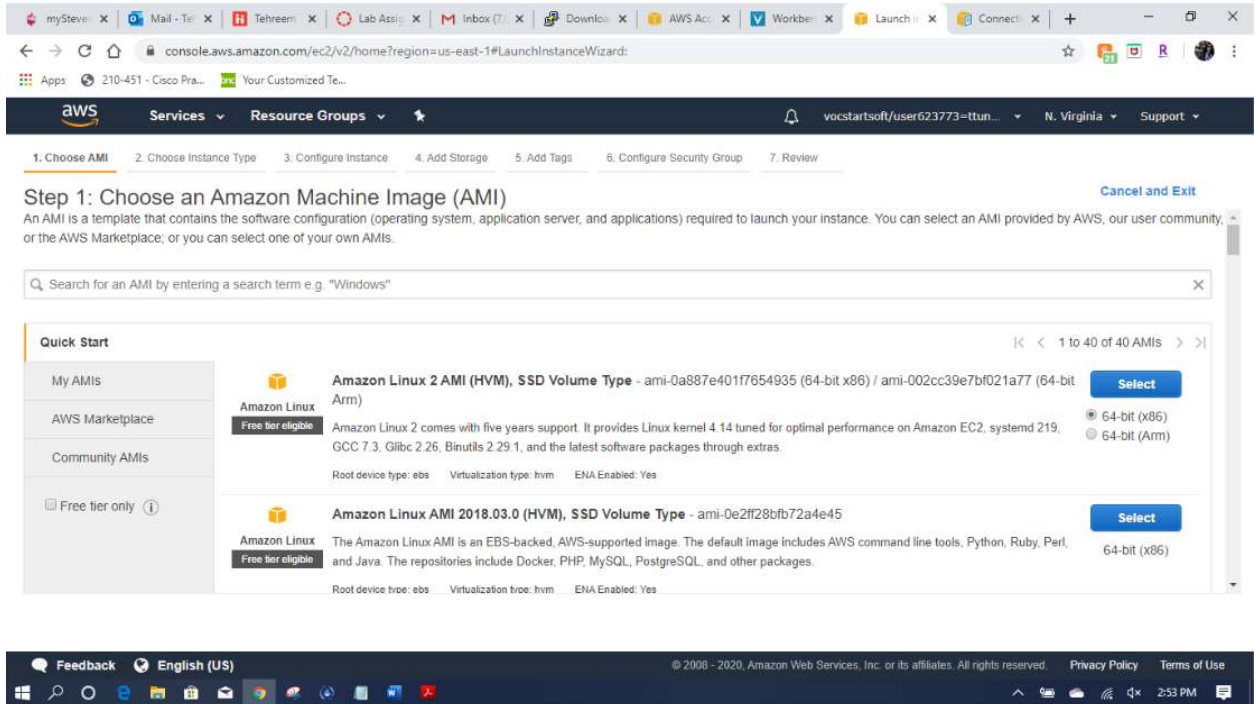
**Easily launch third-party AMI products**

AWS Marketplace has thousands of third-party AMI products that you can find, buy, and deploy with 1-click using the Amazon EC2 console. [Learn more](#)

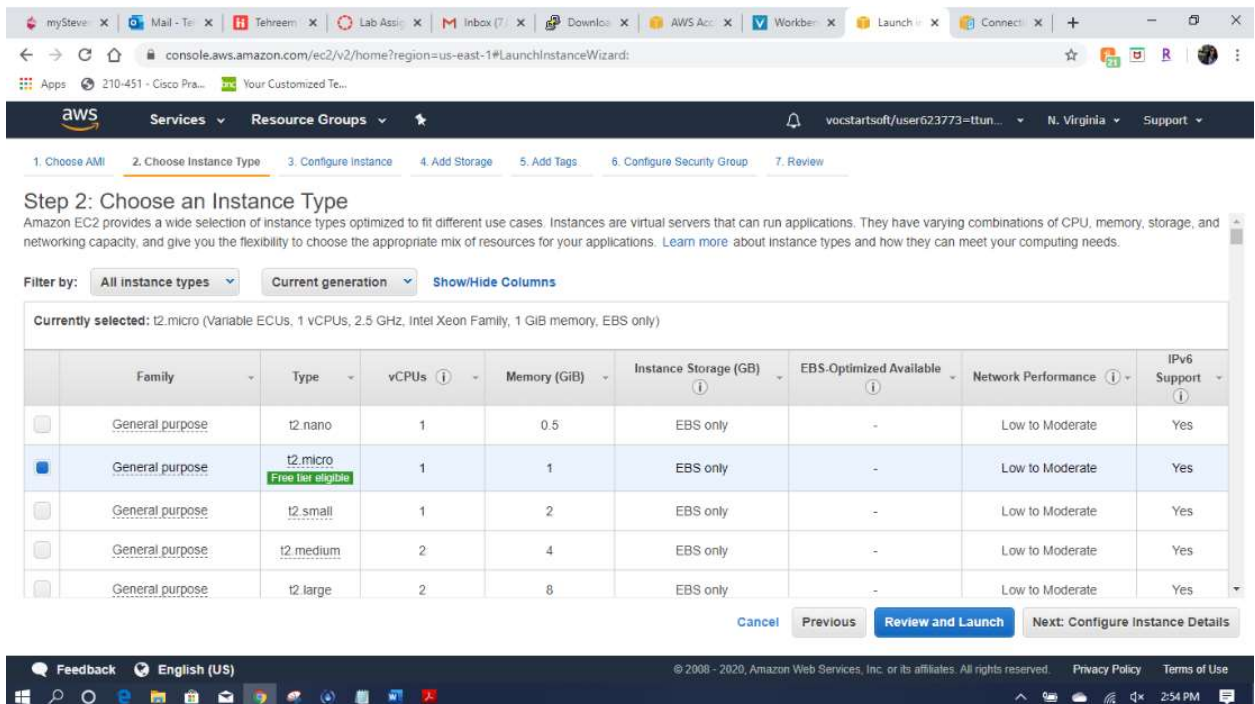
**Save with AMD EPYC-Powered EC2 instances**

Learn how you can use EC2 instances featuring AMD EPYC processors to deliver a 10% lower cost on compute and memory. [Read the solution](#)

3. Choose your AMI- Linux 64-bit:



#### 4. On the next screen, choose t2.micro and select “Review and Launch”:



#### 5. Click “Launch” on the next page:

**Step 7: Review Instance Launch**  
Please review your instance launch details. You can go back to edit changes for each section. Click **Launch** to assign a key pair to your instance and complete the launch process.

1. Choose AMI 2. Choose Instance Type 3. Configure Instance 4. Add Storage 5. Add Tags 6. Configure Security Group 7. Review

▼ AMI Details [Edit AMI](#)

**Amazon Linux 2 AMI (HVM), SSD Volume Type - ami-0a887e401f7654935**

**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 219, GCC 7.3, Glibc 2.26, Binutils 2.29.1, and the latest software packages through extras.

Root Device Type: ebs Virtualization type: hvm

▼ Instance Type [Edit instance type](#)

| Instance Type | ECUs     | vCPUs | Memory (GiB) | Instance Storage (GB) | EBS-Optimized Available | Network Performance |
|---------------|----------|-------|--------------|-----------------------|-------------------------|---------------------|
| t2.micro      | Variable | 1     | 1            | EBS only              | -                       | Low to Moderate     |

▼ Security Groups [Edit security groups](#)

**Security group name** launch-wizard-5

**Description** launch-wizard-5 created 2020-02-15T14:54:10.462-05:00

[Cancel](#) [Previous](#) [Launch](#)

Feedback English (US) © 2008 - 2020, Amazon Web Services, Inc. or its affiliates. All rights reserved. Privacy Policy Terms of Use 2:54 PM

- It will give a prompt to select or create a new pair, select “Create a new key pair” and add “MyKey12” as the Key pair name and click on “Download Key Pair”. After the key pair is downloaded, click “Launch Instances”:



Select an existing key pair or create a new key pair

X

A key pair consists of a **public key** that AWS stores, and a **private key file** that you store. Together, they allow you to connect to your instance securely. For Windows AMIs, the private key file is required to obtain the password used to log into your instance. For Linux AMIs, the private key file allows you to securely SSH into your instance.

Note: The selected key pair will be added to the set of keys authorized for this instance. Learn more about [removing existing key pairs from a public AMI](#).

Create a new key pair

▼

Key pair name

MyKey12

Download Key Pair

...

You have to download the **private key file** (\*.pem file) before you can continue. **Store it in a secure and accessible location.** You will not be able to download the file again after it's created.

Cancel

Launch Instances

7. Now the AMI has been created:

aws

Services

Resource Groups

vocstartsoft/user623773-1tun...

N. Virginia

Support

New EC2 Experience

Learn more

Launch

Actions

Owned by me

Filter by tags and attributes or search by keyword

1 to 1 of 1

<

>

| Name | AMI Name              | AMI ID                | Source            | Owner        | Visibility | Status    | Creation Date                  |
|------|-----------------------|-----------------------|-------------------|--------------|------------|-----------|--------------------------------|
| Lab1 | ami-0e1709ad299f0b969 | ami-0e1709ad299f0b969 | 112619478712/L... | 112619478712 | Private    | available | February 15, 2020 at 12:00:... |

Image: ami-0e1709ad299f0b969

Details

Permissions

Tags

AMI ID

ami-0e1709ad299f0b969

AMI Name

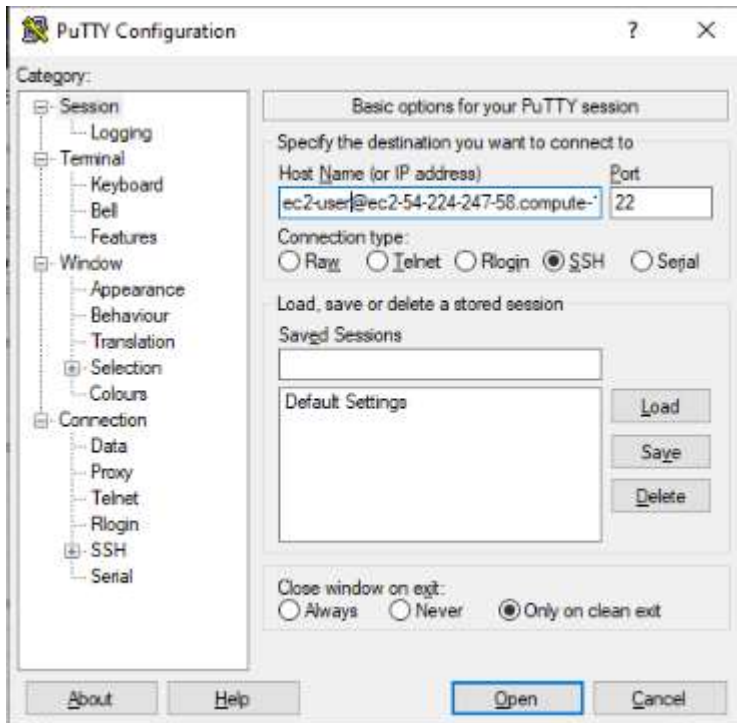
Lab1

Bundle Tasks

Edit

8. Once the status is 'running', launch the instance by clicking on Launch and then Connect to that AMI. For connecting it, download PuTTY and open PuTTY and make the pem key to .ppk key.

After this, enter the following details in PuTTY: HostName as ec2-user@dns of your EC2 machine. Port name should be 22; expand SSH category and under Auth, select the .ppk file you just created. Click Open.



9. The following screen appears:

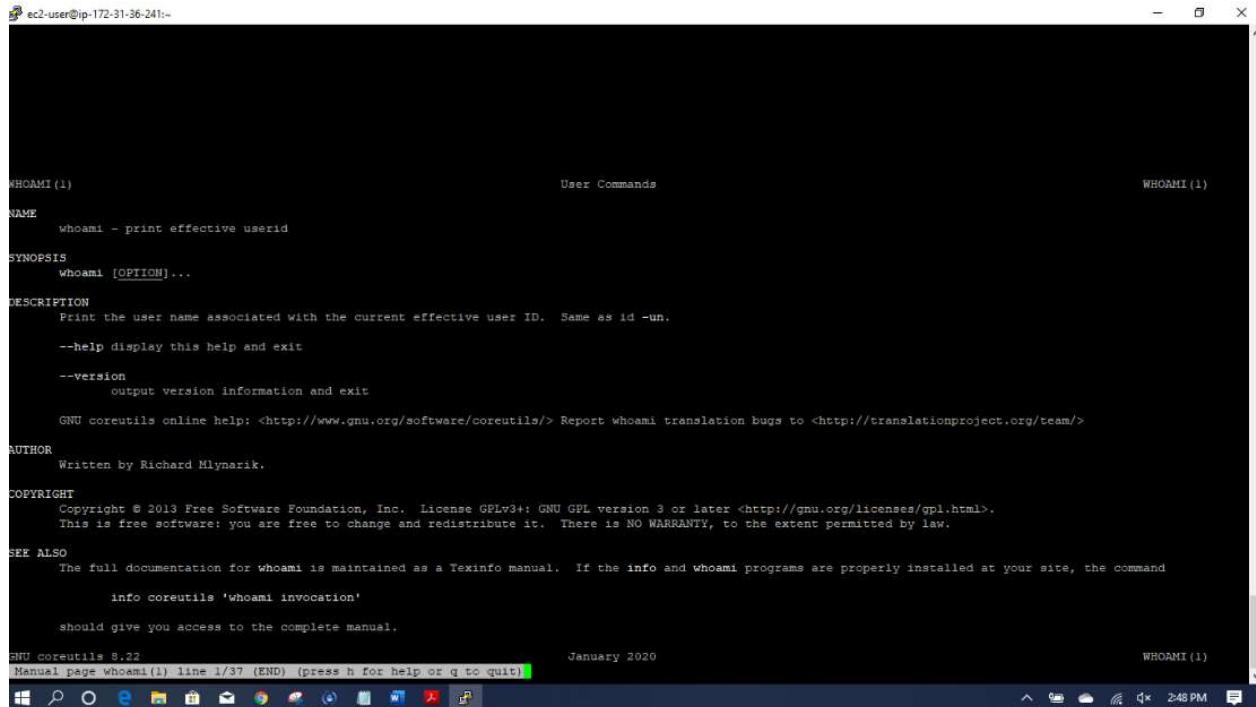


```
ec2-user@ip-172-31-36-241:~$  
Using username "ec2-user".  
Authenticating with public key "imported-openssh-key"  
  
_ _ | _ _ | )  
_ | ( _ | / Amazon Linux 2 AMI  
_ | \ _ | _ |  
  
https://aws.amazon.com/amazon-linux-2/  
No packages needed for security; 2 packages available  
Run "sudo yum update" to apply all updates.  
[ec2-user@ip-172-31-36-241 ~]$
```

10. Type the following commands: `uname -a`  
`whoami`  
`df -h`  
`ifconfig -a`  
`netstat`

```
ec2-user@ip-172-31-36-241:~$  
[ec2-user@ip-172-31-36-241 ~]$ uname -a  
Linux ip-172-31-36-241.ec2.internal 4.14.165-131.185.amzn2.x86_64 #1 SMP Wed Jan 15 14:19:56 UTC 2020 x86_64 x86_64 x86_64 GNU/Linux  
[ec2-user@ip-172-31-36-241 ~]$ whoami  
ec2-user  
[ec2-user@ip-172-31-36-241 ~]$ df -h  
Filesystem      Size  Used Avail Use% Mounted on  
devtmpfs        475M  0  475M   0% /dev  
tmpfs           492M  0  492M   0% /dev/shm  
tmpfs           492M 400K  492M   1% /run  
tmpfs           492M  0  492M   0% /sys/fs/cgroup  
/dev/xvda1      8.0G  1.3G  6.8G  16% /  
tmpfs           99M  0  99M   0% /run/user/1000  
[ec2-user@ip-172-31-36-241 ~]$ ifconfig -a  
eth0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST>  mtu 9001  
    inet 172.31.36.241 netmask 255.255.240.0  broadcast 172.31.47.255  
    inet6 fe80::c9ae:d4ff:fe7d:3cfc prefixlen 64  scopeid 0x20<link>  
    ether 0e:aed4:7d:3c:fc txqueuelen 1000  (Ethernet)  
    RX packets 1052  bytes 119579 (116.7 KiB)  
    RX errors 0  dropped 0  overruns 0  frame 0  
    TX packets 1077  bytes 143744 (140.3 KiB)  
    TX errors 0  dropped 0  overruns 0  carrier 0  collisions 0  
  
lo: flags=73<UP,LOOPBACK,RUNNING>  mtu 65536  
    inet 127.0.0.1 netmask 255.0.0.0  
    inet6 ::1 prefixlen 128  scopeid 0x10<host>  
    loop txqueuelen 1000  (Local Loopback)  
    RX packets 0  bytes 0 (0.0 B)  
    RX errors 0  dropped 0  overruns 0  frame 0  
    TX packets 0  bytes 0 (0.0 B)  
    TX errors 0  dropped 0  overruns 0  carrier 0  collisions 0  
  
[ec2-user@ip-172-31-36-241 ~]$ netstat  
Active Internet connections (w/o servers)  
Proto Recv-Q Send-Q Local Address           Foreign Address         State  
tcp        0      0 304 ip-172-31-36-241.ec2:ssh c-76-116-178-250.155581 ESTABLISHED  
Active UNIX domain sockets (w/o servers)  
Proto RefCnt Flags               Type               State         I-Node  Path  
unix  2      []  DGRAM              17004             /var/run/chrony/chronyd.sock  
unix  3      []  DGRAM              9083              /run/systemd/notify  
unix  2      []  DGRAM              9085              /run/systemd/cgroups-agent  
unix  5      []  DGRAM              9100              /run/systemd/journal/socket  
unix  15     []  DGRAM              9102              /dev/log  
unix  2      []  DGRAM              14240             /run/systemd/shutdown  
unix  3      []  STREAM             18638
```

11. After typing these commands, you can check what do these commands actually do, like what are their functions by typing `man <command name>` Example: If you type `man whoami` ; it gives out what that command actually does:



```
ec2-user@ip-172-31-36-241:~  
  
WHOAMI (1) User Commands WHOAMI (1)  
  
NAME  
  whoami - print effective userid  
  
SYNOPSIS  
  whoami [OPTION]...  
  
DESCRIPTION  
  Print the user name associated with the current effective user ID. Same as id -un.  
  
  --help display this help and exit  
  
  --version  
        output version information and exit  
  
  GNU coreutils online help: <http://www.gnu.org/software/coreutils/> Report whoami translation bugs to <http://translationproject.org/team/>  
  
AUTHOR  
  Written by Richard Mlynarik.  
  
COPYRIGHT  
  Copyright © 2013 Free Software Foundation, Inc. License GPLv3+: GNU GPL version 3 or later <http://gnu.org/licenses/gpl.html>. This is free software: you are free to change and redistribute it. There is NO WARRANTY, to the extent permitted by law.  
  
SEE ALSO  
  The full documentation for whoami is maintained as a Texinfo manual. If the info and whoami programs are properly installed at your site, the command info coreutils 'whoami invocation' should give you access to the complete manual.  
  
GNU coreutils 8.32 January 2020 WHOAMI (1)  
Manual page whoami(1) line 1/37 (END) (press h for help or q to quit)
```

## Commands and their functions:

### 1. `uname -a`

The command `uname` prints system information. It can have the following options:

- `-a, --all`: Prints all information
- `-s, --kernel-name`: Prints the kernel name
- `-n, --nodename`: Prints the network node hostname
- `-r, --kernel-release`: Prints the kernel release
- `-v, --kernel-version`: Prints the kernel version
- `-m, --machine`: Prints the machine hardware name
- `-p, --processor`: Prints the processor type or “unknown”
- `-i, --hardware platform`: Prints the hardware platform or “unknown”
- `-o, --operating system`: Prints the operating system

### 2. `whoami`

The command `whoami` prints effective user id.

### 3. **df -h**

The command `df` reports file system disk usage. It can have the following options:

- `-a, --all`: Include pseudo, duplicate, inaccessible file systems.
- `-B, --block-size-SIZE`: Scales sizes by `SIZE` before printing them
- `--direct`: Shows statistics for a file instead of mount point
- `--total`: Produces a grand total
- `-h, --human-readable`: Prints sizes in human readable format
- `-H, --si`: likewise, but use powers of 1000 not 1024
- `-i, --inodes`: Lists inode information instead of block usage

### 4. **ifconfig -a**

The command `ifconfig` configures a network interface. It can have the following options:

- `-a`: Displays all interfaces which are currently unavailable
- `-s`: Displays a short list
- `-v`: Be more verbose for some error conditions
- `interface`: the name of the interface
- `up`: This flag causes the interface to be activated
- `down`: This flag causes the driver for this interface to be shut down

### 5. **netstat**

This command prints network connections, routing tables, interface statistics, masquerade connections and multicast memberships. It has the following options:

- `-r, --route`: Displays the kernel routing tables
- `-g, --groups`: Displays multicast group membership information for IPv4 and IPv6
- `-i, --interfaces`: Displays a table of all network interfaces
- `M, masquerade`: Displays a list of masqueraded connections
- `-s, --statistics`: Displays summary statistics for each protocol.