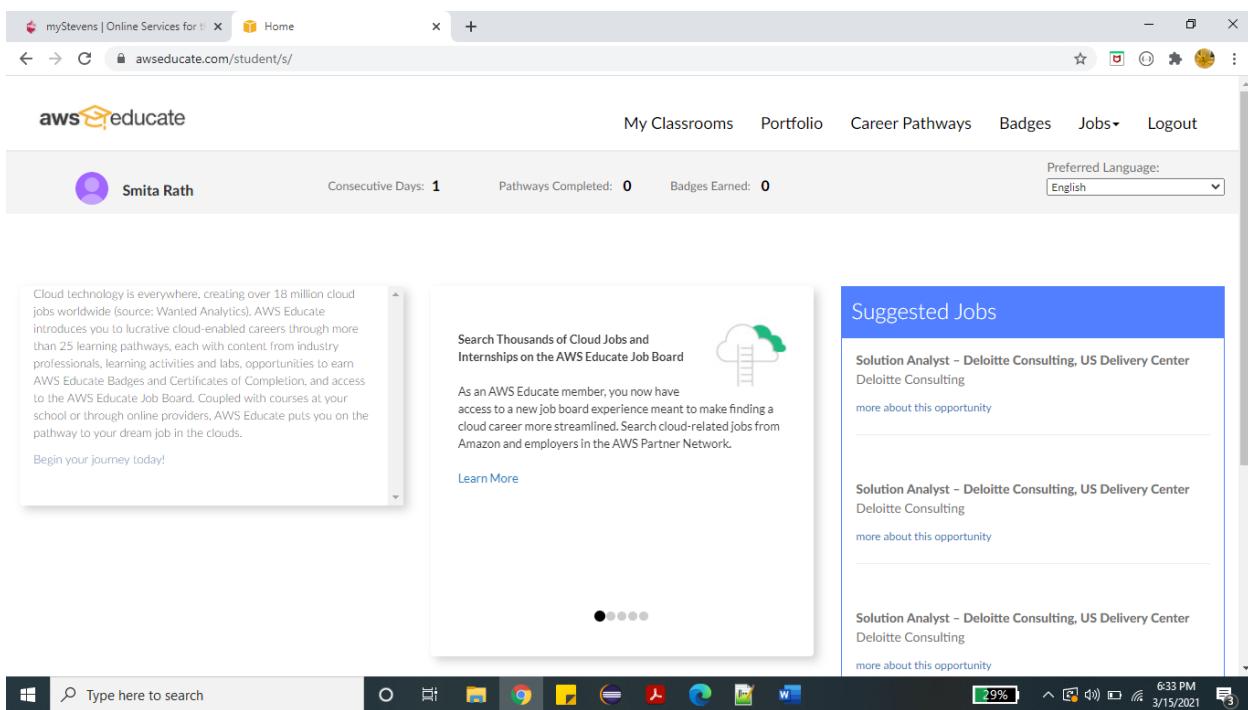
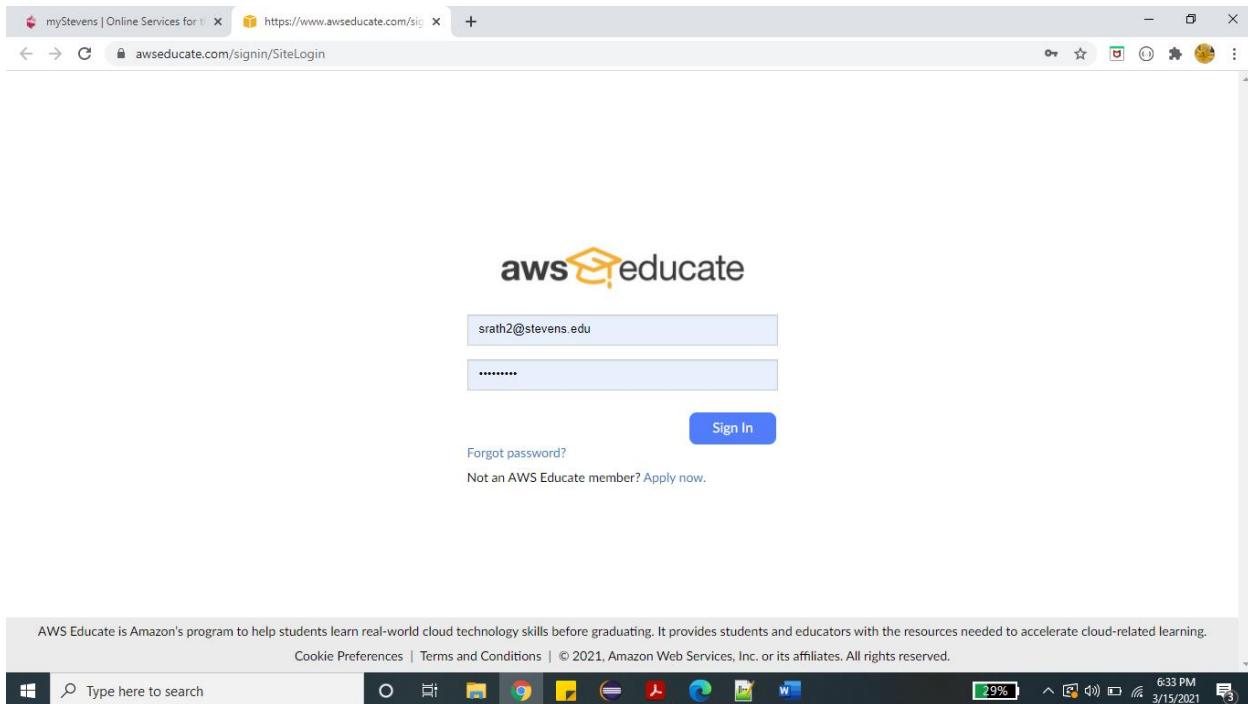


Steps to create account and login AWS console.



The screenshot shows the AWS Educate 'My Classrooms' page. At the top, there are navigation links: 'My Classrooms', 'Portfolio', 'Career Pathways', 'Badges', 'Jobs', and 'Logout'. Below the header, a user profile for 'Smita Rath' is displayed, along with statistics: 'Consecutive Days: 1', 'Pathways Completed: 0', 'Badges Earned: 0', and a 'Preferred Language' dropdown set to 'English'. The main section is titled 'My Classrooms' and contains a message: 'View your list of Classroom invitations and accept or decline the invitation. Access a Classroom by clicking Go to my classroom.' A table lists a single classroom invitation:

Course Name	Description	Educator	Course End Date	Credit Allocated Per Student	Status
Introduction to Cloud Computing	Full introduction to Cloud technologies and economics with the lab work on AWS.	Igor Faynberg	05/19/2021	\$100	Accepted

A blue button labeled 'Go to classroom' with a plus icon is located next to the accepted status. The browser's address bar shows 'awseducate.com/student/s/classrooms'. The taskbar at the bottom includes icons for File Explorer, Google Chrome, Task View, and others, along with system status indicators like battery level (28%) and date/time (6:34 PM, 3/15/2021).

This screenshot shows the same AWS Educate 'My Classrooms' page as above, but with a 'Confirm' dialog box overlaid. The dialog contains the following text:

Clicking "Continue" will take you to a site managed by third-party content and service provider, Vocareum ("Third-Party Content Provider").

In addition to the AWS Educate Terms & Conditions, your use of the Classroom feature is governed by the Third-Party Content Provider's terms and conditions, including its Privacy Policy.

If you have questions regarding the Classroom feature, you should contact the Third-Party Content Provider at <https://help.vocareum.com/>.

AWS assumes no responsibility or liability and makes no representations or warranties regarding services provided by the Third-Party Content Provider.

At the bottom of the dialog are two buttons: 'Continue' (highlighted in orange) and 'Cancel'.

The rest of the page and the taskbar are identical to the first screenshot.

The screenshot shows a Windows desktop environment with a browser window open to the Vocareum Workbench. The browser tabs include 'myStevens | Online Services for t', 'My Classrooms', and 'Workbench'. The main content area displays the 'Welcome to your AWS Educate Account' page. It features a section titled 'Your AWS Account Status' with three items: 'Active' (full access), '\$99.98' (remaining credits estimated), and '2:59' (session time). Below this are several frequently asked questions (FAQs) listed as bullet points.

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 ()
\$	\$99.98 remaining credits (estimated)
⌚	2:59 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!



Part 1 –

Amazon Simple Queue Service (SQS)

Steps to create standard SQS queue

- 1) Open the Amazon SQS console at <https://console.aws.amazon.com/sqs/>

The screenshot shows the AWS Management Console interface. At the top, there's a search bar with placeholder text "Search for services, features, marketplace products, and [Alt+S]". Below the search bar, the AWS logo is followed by "Services" and a dropdown arrow. To the right of the search bar, there are user profile information (vocstartsoft/user1314845=srath2@stevens.edu @ 1512-8321-6846), location (N. Virginia), and support links. The main title "AWS Management Console" is centered above a sidebar and content area. The sidebar on the left has sections for "AWS services" (Recently visited services: Simple Queue Service, All services), "Build a solution" (Launch a virtual machine, Build a web app, Build using virtual servers), and "Explore AWS" (Build Serverless Apps with Infrastructure as Code, AWS Backup). The main content area is currently empty.

2. Search queue and select simple queue service

The screenshot shows the AWS Management Console search results for the term "queue". The search bar at the top contains "queue". The results are displayed under three categories: "Services" (Simple Queue Service, Amazon MQ), "Features" (Job queues, Quantum tasks), and "Documentation" (Documentation link). The "Simple Queue Service" item is highlighted with a blue border. The right side of the screen shows the same "Explore AWS" sidebar as the previous screenshot, including sections for "Build Serverless Apps with Infrastructure as Code" and "AWS Backup". The bottom of the screen shows the Windows taskbar with various pinned icons and the system tray indicating battery level (27%), network status, and date/time (6:22 PM, 3/12/2021).

3. Click create queue

The screenshot shows the Amazon SQS home page. At the top right, there is a 'Get started' box with a 'Create queue' button. Below it is a 'Pricing (US)' section. In the center, there is a diagram titled 'How it works' showing a flow from 'Producers' to 'Consumers' through a central message queue. The URL in the address bar is <https://console.aws.amazon.com/sqs/v2/home?region=us-east-1#/create-queue>.

4. Provide queue name

The screenshot shows the 'Create queue' details page. Under the 'Type' section, the 'Standard' option is selected. In the 'Name' field, the value 'Smita' is entered. The URL in the address bar is <https://console.aws.amazon.com/sqs/v2/home?region=us-east-1#/create-queue>.

5. Click create queue

The screenshot shows the 'Create Queue' wizard on the AWS SQS console. The current step is 'Access policy'. A JSON configuration is displayed:

```
"Principal": { "AWS": "151283216846" }, "Action": [ "SQS:*" ], "Resource": "arn:aws:sqs:us-east-1:151283216846:Smita"
```

Below the access policy, there are three optional sections: 'Encryption - Optional', 'Dead-letter queue - Optional', and 'Tags - Optional'. At the bottom right are 'Cancel' and 'Create queue' buttons.

6. Queue created successfully

The screenshot shows the 'Queues' page on the AWS SQS console. A green success message at the top states: 'Queue Smita created successfully. You can now send and receive messages.' Below this, the 'Smita' queue is listed with its details: Name (Smita), Type (Standard), ARN (arn:aws:sqs:us-east-1:151283216846:Smita), URL (https://sqs.us-east-1.amazonaws.com/151283216846/Smita), and Dead-letter queue (-). Action buttons include Edit, Delete, Purge, and Send and receive messages. Navigation links include 'Amazon SQS > Queues > Smita'. At the bottom, tabs for 'SNS subscriptions', 'Lambda triggers', 'Dead-letter queue', 'Monitoring', 'Tagging', 'Access policy', and 'Encryption' are visible.

7. From the left console go to queues

The screenshot shows the AWS SQS Queue Details page for a queue named 'Smita'. At the top, a green banner says 'Queue Smita created successfully! You can now send and receive messages.' Below the banner, the queue name 'Smita' is displayed in large letters. A navigation bar shows 'Amazon SQS > Queues > Smita'. On the right, there are four buttons: 'Edit', 'Delete', 'Purge', and 'Send and receive messages'. The main area is titled 'Details' and contains the following information:

Name	Type	ARN
Smita	Standard	arn:aws:sqs:us-east-1:151283216846:Smita

Below this, another row of details is shown:

Encryption	URL	Dead-letter queue
-	https://sqs.us-east-1.amazonaws.com/151283216846/Smita	-

A 'More' button is located at the bottom left of this section.

The screenshot shows the AWS SQS Queues list page. The title bar indicates 'Queues (1)'. A search bar at the top says 'Search queues by prefix'. Below the search bar is a table with the following columns: Name, Type, Created, Messages available, Messages in flight, Encryption, and Content-based deduplication. One row is visible for the queue 'Smita'.

Name	Type	Created	Messages available	Messages in flight	Encryption	Content-based deduplication
Smita	Standard	3/12/2021, 18:25:25 EST	0	0	-	-

8. Select your queue and select send and receive messages

Amazon SQS

console.aws.amazon.com/sqs/v2/home?region=us-east-1#/queues

Services ▾ Search for services, features, marketplace products, and do [Alt+S]

vocstartsoft/user1314845=srath2@stevens.edu @ 1512-8321-6846 N. Virginia Support

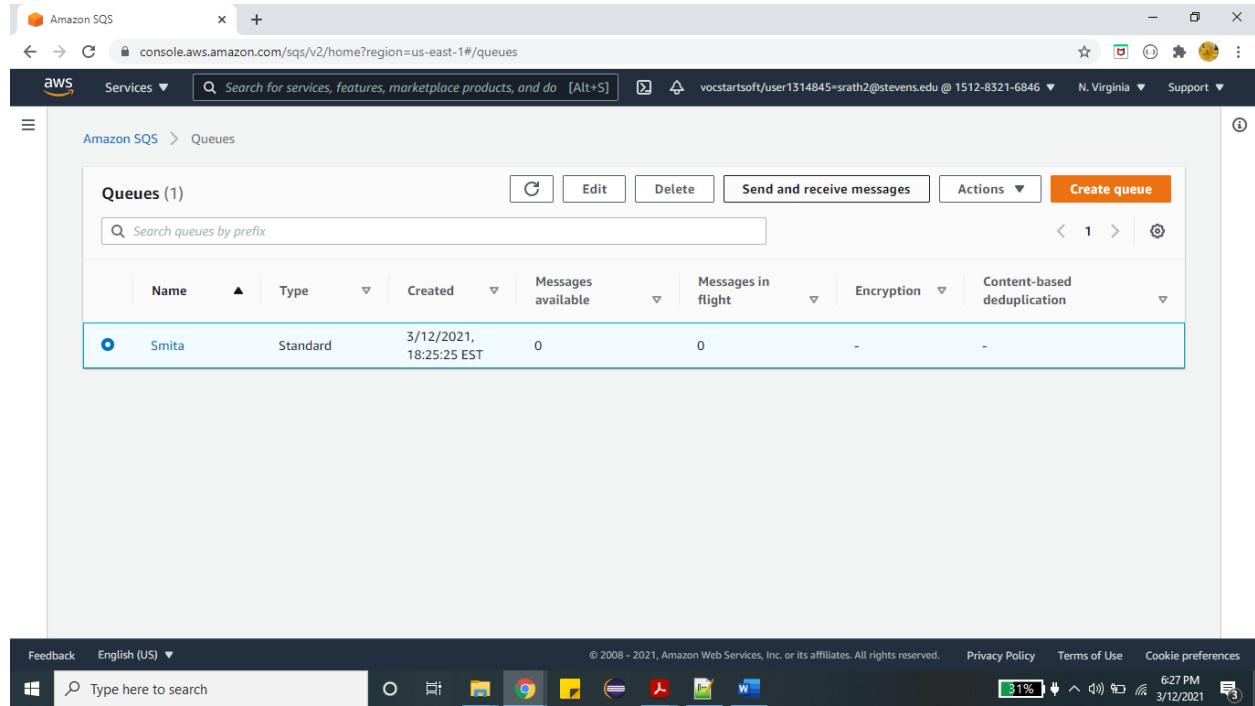
Amazon SQS Queues (1)

Queues (1) Edit Delete Send and receive messages Actions Create queue

Search queues by prefix < 1 >

Name	Type	Created	Messages available	Messages in flight	Encryption	Content-based deduplication
Smita	Standard	3/12/2021, 18:25:25 EST	0	0	-	-

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Amazon SQS

console.aws.amazon.com/sqs/v2/home?region=us-east-1#/queues/https%3A%2F%2Fsqs.us-east-1.amazonaws.com%2F151283216846%2FSmita/send-receive

Services ▾ Search for services, features, marketplace products, and do [Alt+S]

vocstartsoft/user1314845=srath2@stevens.edu @ 1512-8321-6846 N. Virginia Support

Amazon SQS Queues Smita Send and receive messages

Send and receive messages

Send messages to and receive messages from a queue.

Send message Info Clear content Send message

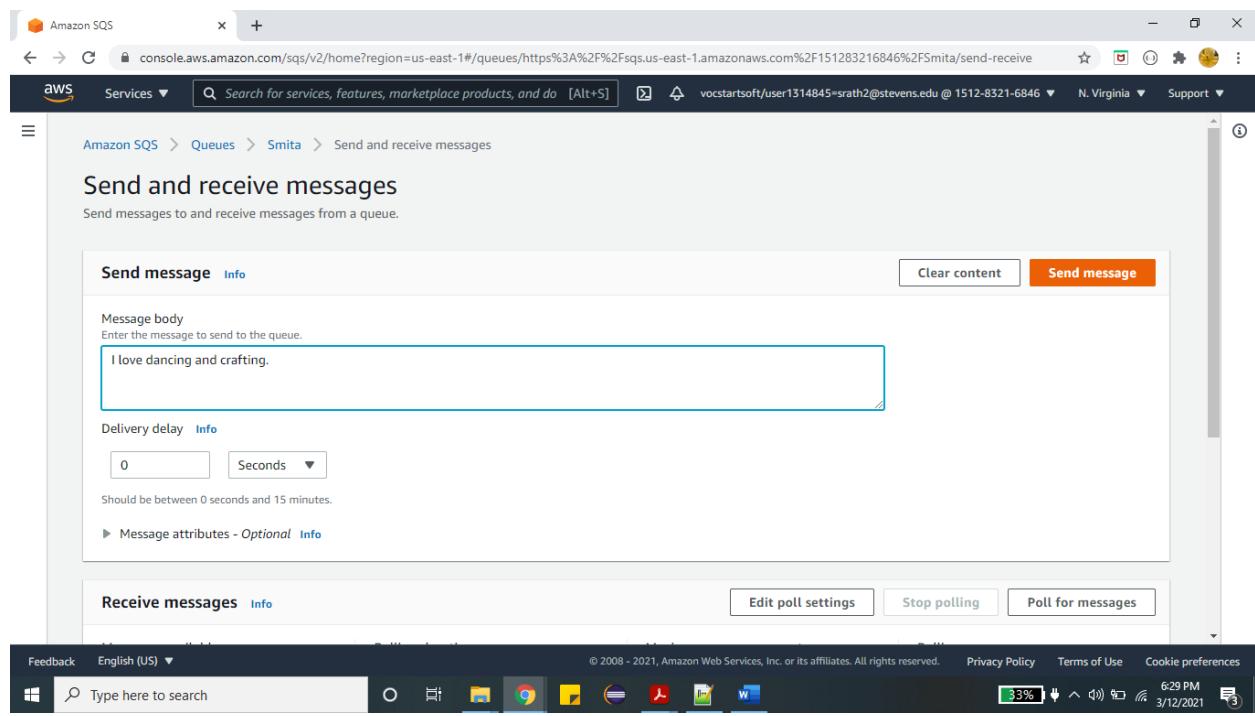
Message body Enter the message to send to the queue.
I love dancing and crafting.

Delivery delay Info
0 Seconds Should be between 0 seconds and 15 minutes.

Message attributes - Optional Info

Receive messages Info Edit poll settings Stop polling Poll for messages

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The screenshot shows the AWS SQS 'Send and receive messages' interface. At the top, there's a success message: "Your message has been sent and is ready to be received." Below this, the "Message body" field contains the text "I love dancing and crafting.". Under "Delivery delay", there's a field set to 0 seconds. A "Message attributes" section is partially visible. The browser's address bar shows the URL: `console.aws.amazon.com/sqs/v2/home?region=us-east-1#/queues/https%3A%2F%2Fsqs.us-east-1.amazonaws.com%2F151283216846%2FSmita/send-receive`. The taskbar at the bottom shows various application icons.

This screenshot is similar to the first one but includes message attributes. The "Message body" field contains "I love dancing and crafting.". The "ID" attribute is listed as "919b2004-e37f-4f2a-ba53-33dfc328b971". The "MD5 of message body" attribute is "e1a2fc3f1cffddaa60afea2093e66d27a". The "MD5 of message attributes" attribute is "-". The "Done" button is visible at the bottom right of the message details window. The browser and taskbar are identical to the first screenshot.

7) To view the messages click poll for messages

Amazon SQS

console.aws.amazon.com/sqs/v2/home?region=us-east-1#/queues/https%3A%2F%2Fsqs.us-east-1.amazonaws.com%2F151283216846%2Fsmita/send-receive

Services ▾ Search for services, features, marketplace products, and do [Alt+S] vocstartsoft/user1314845=srath2@stevens.edu @ 1512-8321-6846 N. Virginia Support ▾

0 Seconds ▾ Should be between 0 seconds and 15 minutes.

Message attributes - Optional Info

Receive messages Info Edit poll settings Stop polling Poll for messages

Messages available: 1 Polling duration: 30 Maximum message count: 10 Polling progress: 0 receives/second 0%

Messages (0) View details Delete

Search messages < 1 > ⌂

ID	Sent	Size	Receive count
No messages. To view messages in the queue, poll for messages.			

Poll for messages

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Amazon SQS

console.aws.amazon.com/sqs/v2/home?region=us-east-1#/queues/https%3A%2F%2Fsqs.us-east-1.amazonaws.com%2F151283216846%2Fsmita/send-receive

Services ▾ Search for services, features, marketplace products, and do [Alt+S] vocstartsoft/user1314845=srath2@stevens.edu @ 1512-8321-6846 N. Virginia Support ▾

Delivery delay Info 0 Seconds ▾ Should be between 0 seconds and 15 minutes.

Message attributes - Optional Info

Receive messages Info Edit poll settings Stop polling Poll for messages

Messages available: 1 Polling duration: 30 Maximum message count: 10 Polling progress: 1 receives/second 30%

Messages (1) View details Delete

Search messages < 1 > ⌂

ID	Sent	Size	Receive count
919b2004-e37f-4f2a-ba53-33dfc328b971	3/12/2021, 18:30:19 EST	28 bytes	1

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The screenshot shows the AWS SQS console with a message detail view. The message ID is 919b2004-e37f-4f2a-ba53-33dfc328b971. The message body contains the text "I love dancing and crafting.". The message was sent on 3/12/2021, 18:30:19 EST. The message has a receive count of 2. The message was delivered 0 seconds ago. There are tabs for Details, Body (which is selected), and Attributes. A sidebar on the left shows delivery delay settings (0 seconds) and a list of messages available (1). A "Done" button is at the bottom right.

9. To delete messages, select message and click delete

The screenshot shows the AWS SQS console with a message selection interface. A single message is selected for deletion. The message ID is 919b2004-e37f-4f2a-ba53-33dfc328b971. The message was sent on 3/12/2021, 18:30:19 EST. The message has a receive count of 2. The message was delivered 0 seconds ago. The "Delete" button is highlighted in the message list table.

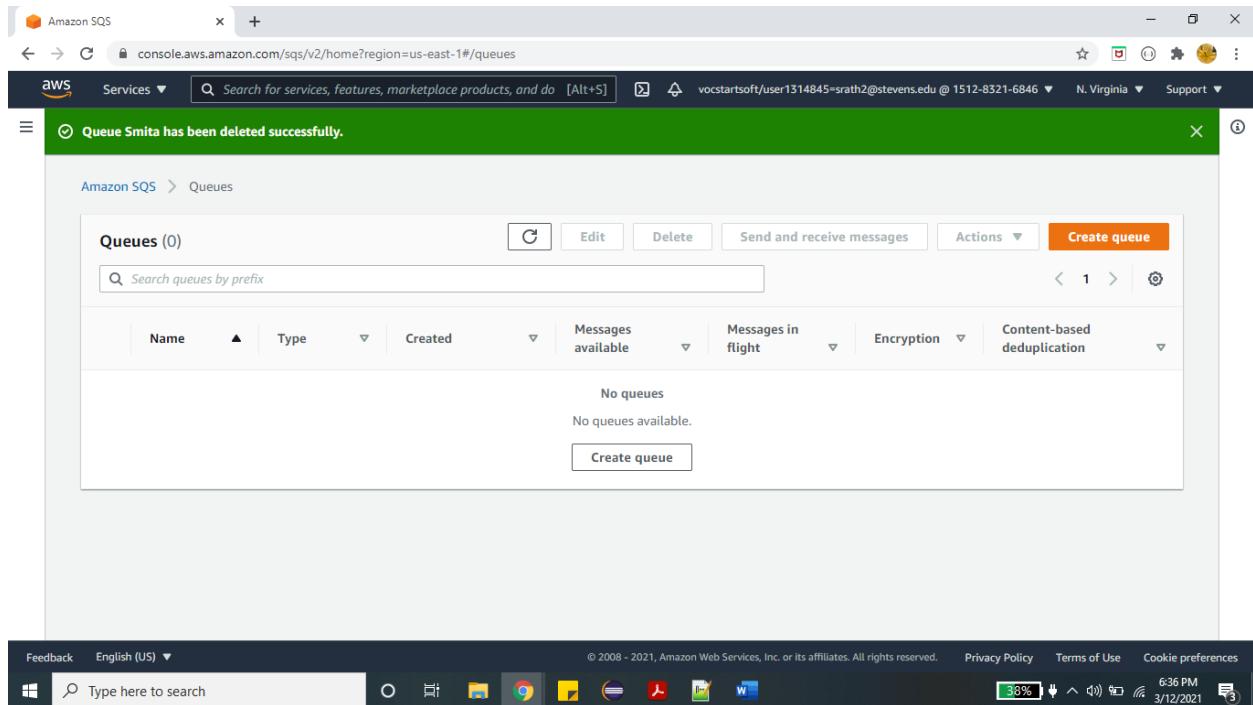
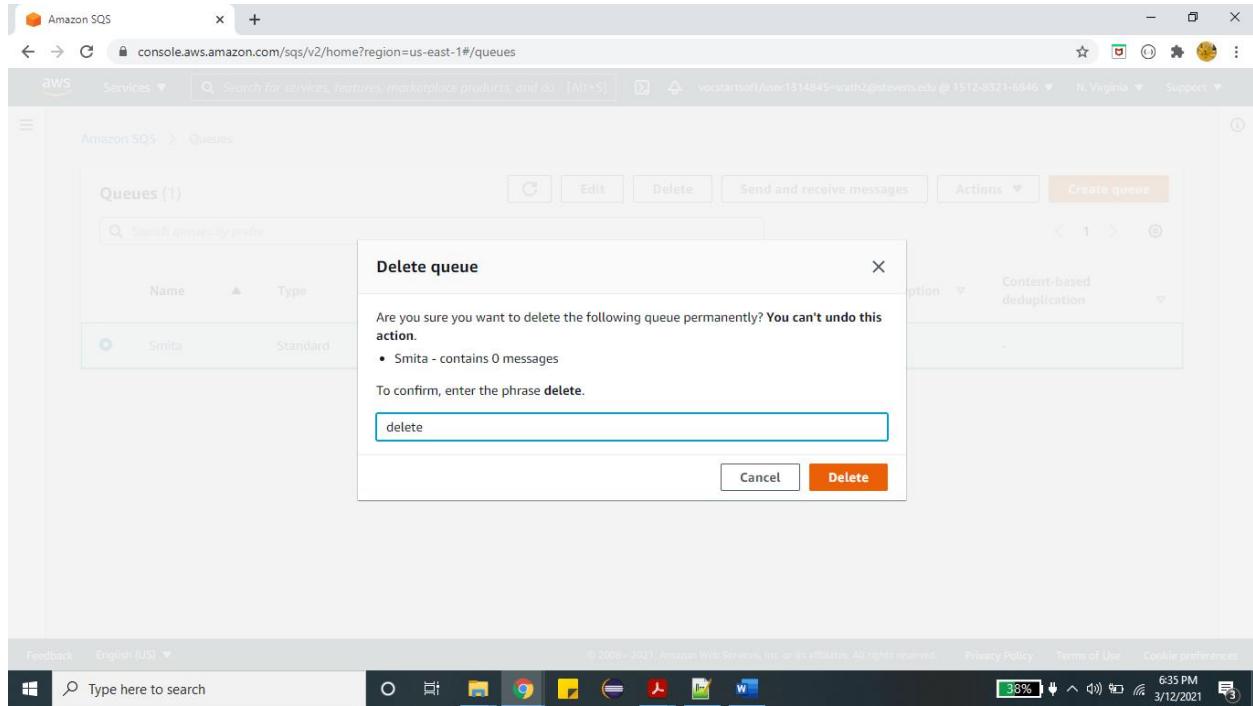
The screenshot shows the AWS SQS console interface. A modal dialog titled "Delete Messages" is open, asking if the user is sure they want to delete a message. The message ID listed is 919b2004-e57f-4f2a-ba53-53dfc328b971 (28 bytes). Below the modal, a table lists messages available in the queue. One message is selected for deletion, matching the ID shown in the modal. The table columns include ID, Sent, Size, and Receive count.

The screenshot shows the AWS SQS console after a message has been deleted. A green success notification box displays the message "1 message deleted successfully." The table below shows that there are now 0 messages available in the queue. The table columns are ID, Sent, Size, and Receive count.

10. To delete a queue, select queue and delete it.

The screenshot shows the AWS SQS (Simple Queue Service) console. At the top, there's a navigation bar with the AWS logo, a search bar, and account information. Below it, the main interface has a header 'Amazon SQS > Queues'. A table titled 'Queues (1)' displays one item: 'Smita' (Standard type, created 3/12/2021, 18:25:25 EST). There are buttons for 'Edit', 'Delete', 'Send and receive messages', and 'Actions' (with a dropdown menu and a 'Create queue' button).

This screenshot shows the same AWS SQS interface, but with a modal dialog box overlaid. The dialog is titled 'Delete queue' and contains a warning message: 'Are you sure you want to delete the following queue permanently? You can't undo this action.' It lists the queue 'Smita - contains 0 messages'. Below the message, it says 'To confirm, enter the phrase **delete**'. A text input field contains the word 'delete'. At the bottom of the dialog are 'Cancel' and 'Delete' buttons.



https://docs.aws.amazon.com/AWSEC2/latest/UserGuide/EC2_GetStarted.html

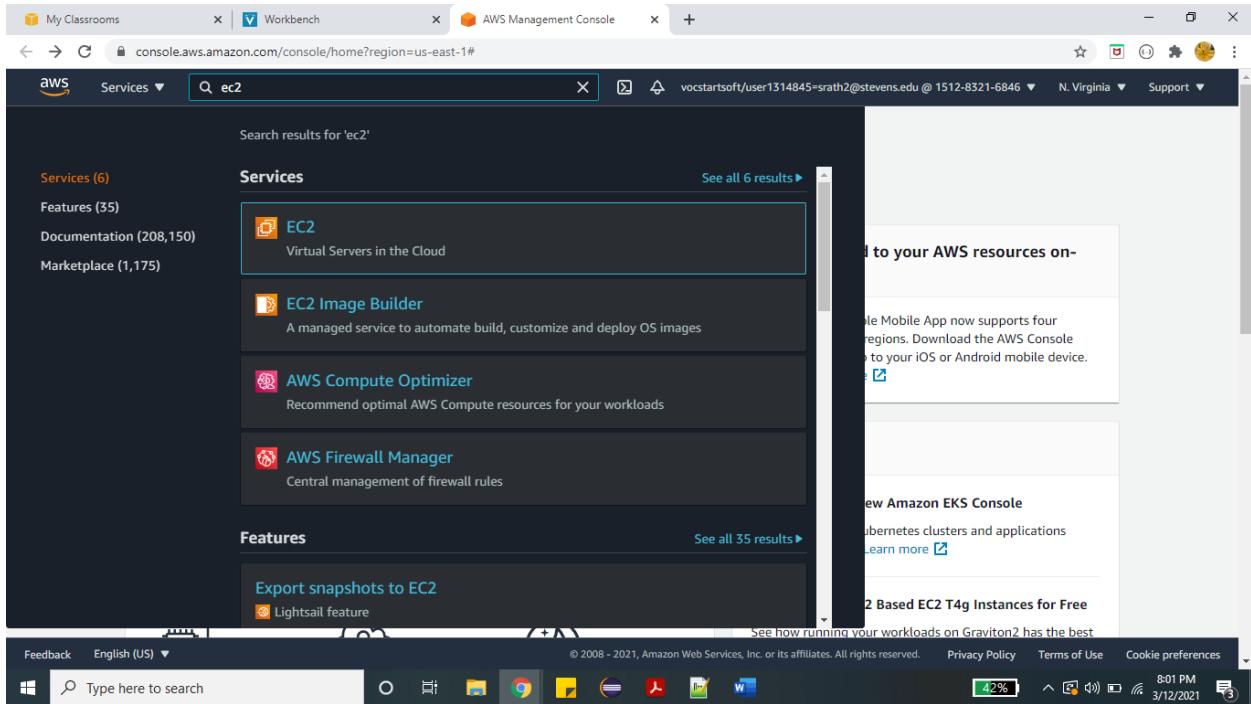
<https://aws.amazon.com/getting-started/hands-on/send-messages-distributed-applications/>

Part -2

Setting up a free Amazon EC2 instance

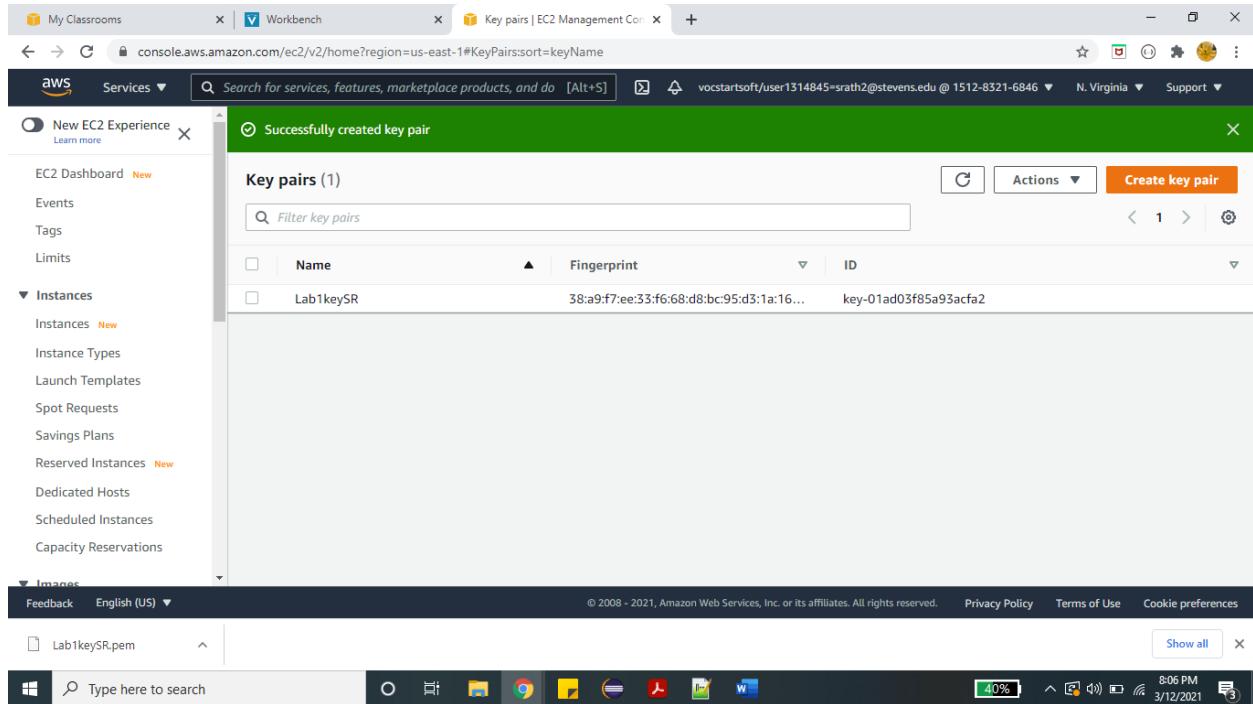
To launch amazon ec2 instance these steps are followed:

- 1) Open the Amazon EC2 console at <https://console.aws.amazon.com/ec2/>

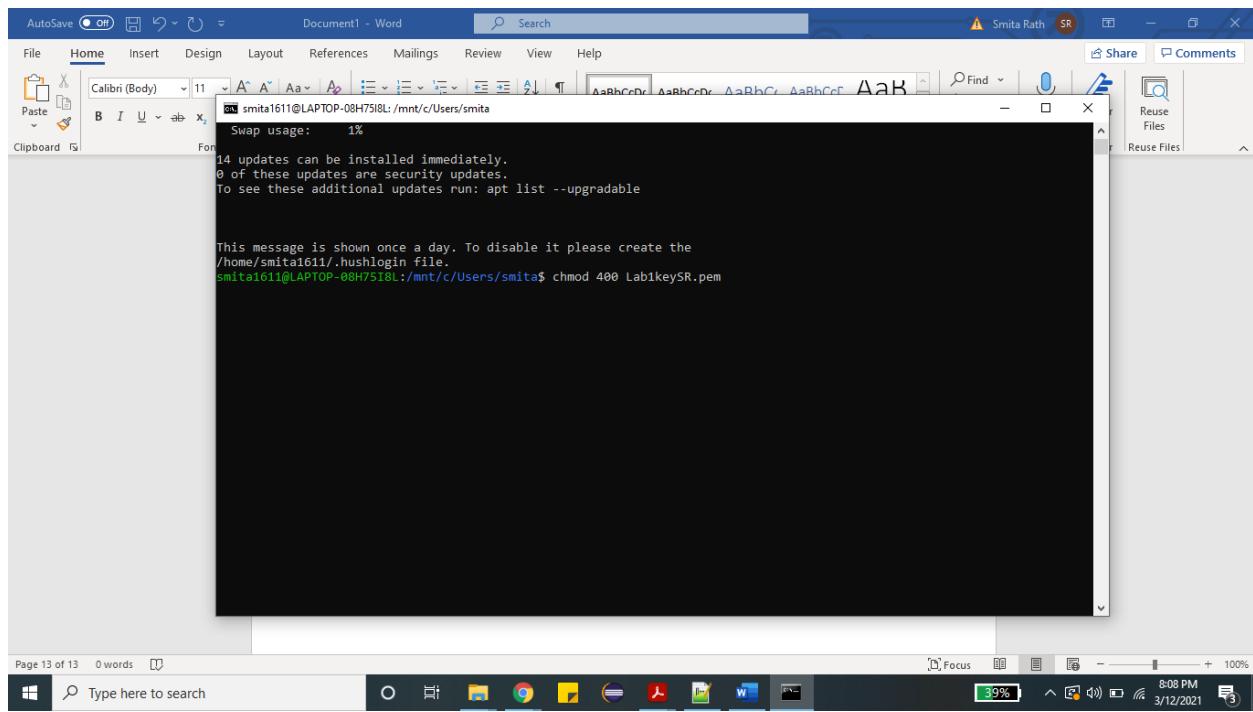


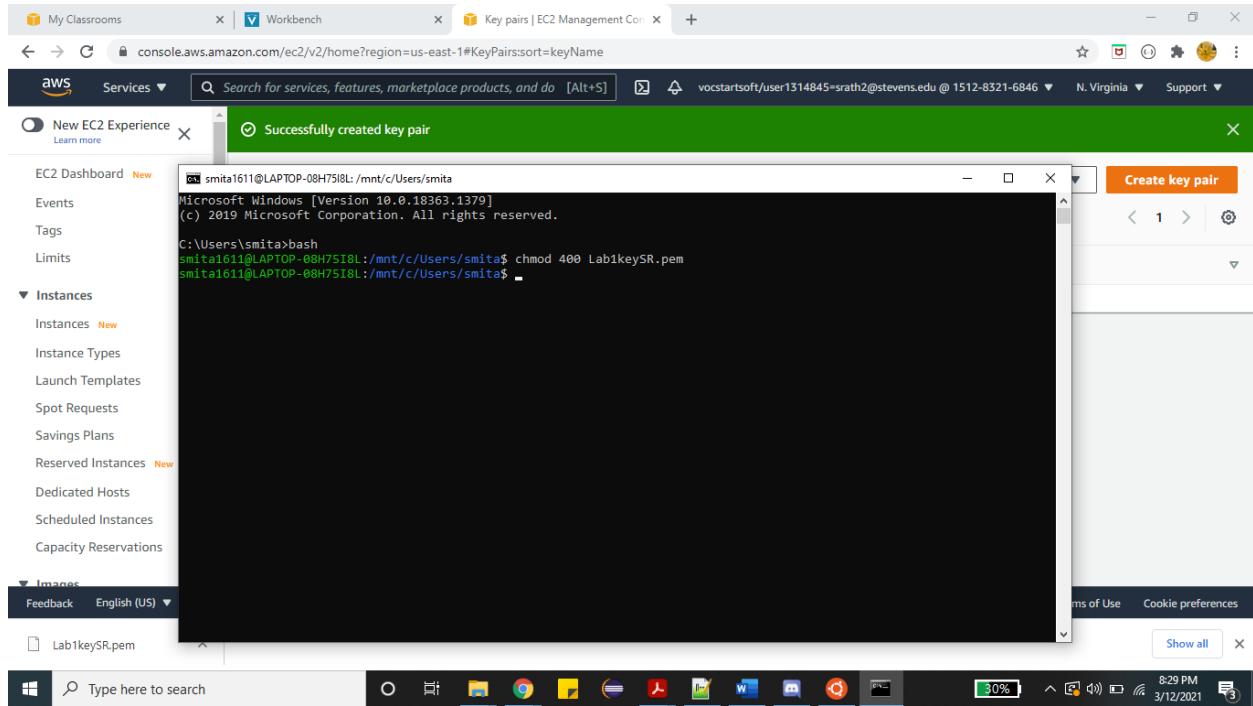
- 2) In the navigation pane, choose **Key Pairs**.

- 3) For **Name**, enter a descriptive name for the key pair. Amazon EC2 associates the public key with the name that you specify as the key name. A key name can include up to 255 ASCII characters. It can't include leading or trailing spaces.
- 4) For **File format**, choose the format in which to save the private key. To save the private key in a format that can be used with OpenSSH, choose **pem**. To save the private key in a format that can be used with PuTTY, choose **ppk**.
- 5) Choose Create key pair

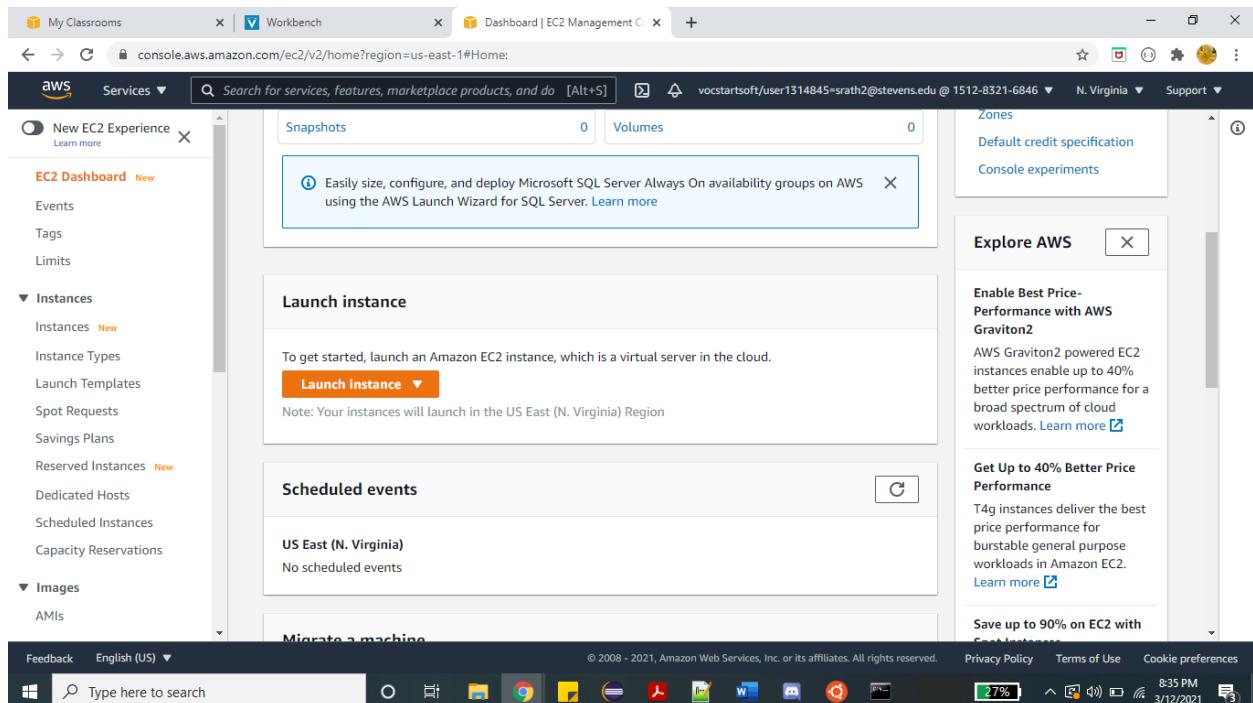


6) Setting permission of the private key





7) From the console dashboard, choose **Launch Instance**.



8) The **Choose an Amazon Machine Image (AMI)** page displays a list of basic configurations, called *Amazon Machine Images (AMIs)*, that serve as templates for your instance. Select an HVM version of Amazon Linux 2. Notice that these AMIs are marked "Free tier eligible."

Step 1: Choose an Amazon Machine Image (AMI)

An AMI is a template that contains the software configuration (operating system, application server, and applications) required to launch your instance. You can select an AMI provided by AWS, our user community, or the AWS Marketplace; or you can select one of your own AMIs.

Search for an AMI by entering a search term e.g. "Windows"

Quick Start

- My AMIs
- Amazon Linux **Free tier eligible** Amazon Linux 2 AMI (HVM), SSD Volume Type - ami-038f1ca1bd58a5790 (64-bit x86) / ami-01437b695ea9225cd (64-bit Arm)
 - Select
 - 64-bit (x86)
 - 64-bit (Arm)
- AWS Marketplace
- Community AMIs
- Free tier only (i)
- macOS Big Sur 11.2.1 - ami-0af92ed5f8a74cda3 **Select** 64-bit (Mac)

- 9) On the **Choose an Instance Type** page, you can select the hardware configuration of your instance. Select the **t2.micro** instance type, which is selected by default. The **t2.micro** instance type is eligible for the free tier. In Regions where **t2.micro** is unavailable, you can use a **t3.micro** instance under the free tier.
- 10) On the **Choose an Instance Type** page, choose **Review and Launch** to let the wizard complete the other configuration settings for you.

	Family	Type	vCPUs <small>(i)</small>	Memory (GiB)	Instance Storage (GB) <small>(i)</small>	EBS-Optimized Available <small>(i)</small>	Network Performance <small>(i)</small>	IPv6 Support <small>(i)</small>
<input type="checkbox"/>	t2	t2.nano	1	0.5	EBS only	-	Low to Moderate	Yes
<input checked="" type="checkbox"/>	t2	t2.micro <small>Free tier eligible</small>	1	1	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	t2	t2.small	1	2	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	t2	t2.medium	2	4	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	t2	t2.large	2	8	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	t2	t2.xlarge	4	16	EBS only	-	Moderate	Yes
<input type="checkbox"/>	t2	t2.2xlarge	8	32	EBS only	-	Moderate	Yes
<input type="checkbox"/>	t3	t3.nano	2	0.5	EBS only	Yes	Up to 5 Gigabit	Yes

Currently selected: t2.micro (- ECUs, 1 vCPUs, 2.5 GHz, -, 1 GiB memory, EBS only)

Cancel Previous **Review and Launch** Next: Configure Instance Details

11) On the **Review Instance Launch** page, choose **Launch**.

The screenshot shows the AWS Launch Instance Wizard at Step 7: Review Instance Launch. At the top, there are tabs for 1. Choose AMI, 2. Choose Instance Type, 3. Configure Instance, 4. Add Storage, 5. Add Tags, 6. Configure Security Group, and 7. Review. The 7. Review tab is selected. Below the tabs, it says "Step 7: Review Instance Launch". It displays the following information:

- Amazon Linux 2 AMI (HVM), SSD Volume Type - ami-038f1ca1bd58a5790**
- 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. This AMI is the successor of the Amazon Linux AMI that is a...
- Root Device Type: ebs Virtualization type: hvm**

Instance Type (Edit instance type):

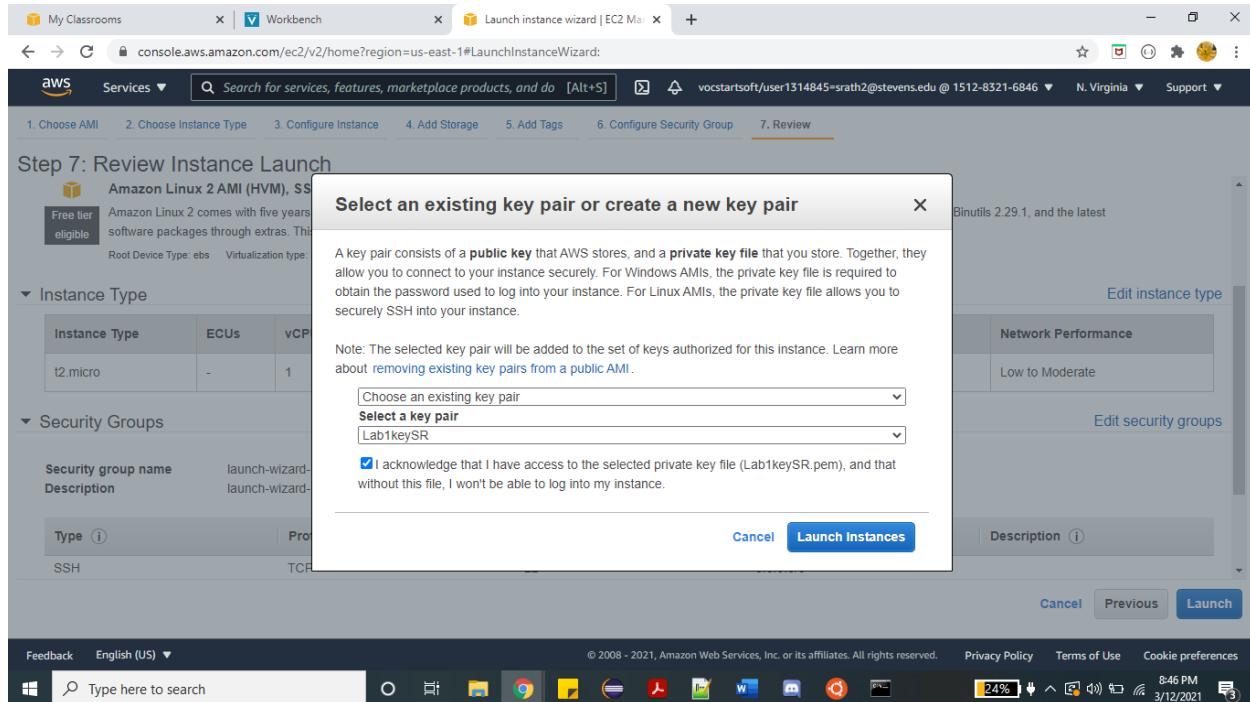
Instance Type	ECUs	vCPUs	Memory (GiB)	Instance Storage (GB)	EBS-Optimized Available	Network Performance
t2.micro	-	1	1	EBS only	-	Low to Moderate

Security Groups (Edit security groups):

Type (i)	Protocol (i)	Port Range (i)	Source (i)	Description (i)
SSH	TCP	22	0.0.0.0/0	

At the bottom right, there are buttons for **Cancel**, **Previous**, and **Launch**. The browser status bar at the bottom shows "Feedback English (US) ▾ Type here to search" and system icons like battery level (24%), time (8:44 PM), and date (3/12/2021).

- 12) When prompted for a key pair, select **Choose an existing key pair**, then select the key pair that you created when getting set up.
13) When you are ready, select the acknowledgement check box, and then choose **Launch Instances**.



14) A confirmation page lets you know that your instance is launching. Choose **View Instances** to close the confirmation page and return to the console.

Launch Status

Your instances are now launching
The following instance launches have been initiated: i-00c8a481f9051f79e [View launch log](#)

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 instances
Your instances are launching, and it may take a few minutes until they are in the **running** state, when they will be ready for you to use. Usage hours on your new instances will start immediately and continue to accrue until you stop or terminate your instances.
Click [View Instances](#) to monitor your instances' status. Once your instances are in the **running** state, you can **connect** to them from the Instances screen. [Find out how to connect to your instances.](#)

Here are some helpful resources to get you started

- How to connect to your Linux instance
- Amazon EC2: User Guide
- Learn about AWS Free Usage Tier

While your instances are launching you can also

15) On the **Instances** screen, you can view the status of the launch. It takes a short time for an instance to launch. When you launch an instance, its initial state is **pending**. After the instance starts, its state changes to **running** and it receives a public DNS name.

The screenshot shows the AWS EC2 Management Console interface. In the top navigation bar, there are tabs for 'My Classrooms', 'Workbench', and 'Instances | EC2 Management Con...'. The main content area is titled 'Instances (1) Info' and displays a table with one row. The table columns are: Name, Instance ID, Instance state, Instance type, Status check, Alarm status, and Availability Zone. The single instance listed is named '-' with the Instance ID 'i-00c8a481f9051f79e', it is 'Running', its 'Instance type' is 't2.micro', its 'Status check' is 'Initializing', it has '1/1' alarms, and it is in the 'us-east-1b' availability zone. On the left sidebar, under the 'Instances' section, the 'Instances' option is selected. Other visible sections include 'Images' (AMIs), 'Events', 'Tags', and 'Limits'. At the bottom of the screen, there is a Windows taskbar with various icons and a search bar.

16) Connecting to Linux instance

17) In a terminal window, use the **ssh** command to connect to the instance

18) Type `ssh -i /path/my-key-pair.pem my-instance-user-name@my-instance-public-dns-name`
`ssh -i Lab1keySR.pem ec2-user@ec2-54-174-40-182.compute-1.amazonaws.com`

The screenshot shows a terminal window with a black background and white text. The terminal prompt is 'ec2-user@ip-172-31-83-29 ~'. The user types the command 'ssh -i ~/ssh/Lab1keySR.pem ec2-user@ec2-54-173-48-182.compute-1.amazonaws.com'. The response shows the Amazon Linux 2 AMI logo and the URL 'https://aws.amazon.com/amazon-linux-2/'. The terminal window is part of a larger desktop environment with a taskbar at the bottom.

19) Connected to instance, execute commands

20) `uname -a`

This command prints the system information like kernel name, node name, processor, machine, hardware platform, operating systems.

```
ec2-user@ip-172-31-83-29:~
```

```
C:\Users\smita>bash
```

```
mita1611@LAPTOP-0BH7S1BL:/mnt/c/Users/smita$ ssh -i ~/.ssh/LabikeySR.pem ec2-user@ec2-54-173-48-182.compute-1.amazonaws.com
```

```
Amazon Linux 2 AMI
```

```
https://aws.amazon.com/amazon-linux-2/
```

```
ec2-user@ip-172-31-83-29 ~]$ uname -a
```

```
linux ip-172-31-83-29.ec2.internal 4.14.219-164.354.amzn2.x86_64 #1 SMP Mon Feb 22 21:18:39 UTC 2021 x86_64 x86_64 x86_64 GNU/Linux
```

```
ec2-user@ip-172-31-83-29 ~]$
```

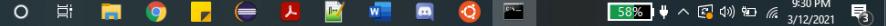
21) man uname -a

```
ec2-user@ip-172-31-83-29:~
```

NAME		
uname - print system information		
SYNOPSIS		
uname [OPTION]...		
DESCRIPTION		
Print certain system information. With no OPTION, same as -s.		
-a, --all	print all information, in the following order, except omit -p and -i if unknown:	
-s, --kernel-name	print the kernel name	
-n, --nodename	print the network node hostname	
-r, --kernel-release	print the kernel release	
-v, --kernel-version	print the kernel version	
-m, --machine	print the machine hardware name	
-p, --processor	print the processor type or "unknown"	
-i, --hardware-platform	print the hardware platform or "unknown"	
-o, --operating-system	print the operating system	
--help	display this help and exit	
--version	output version information and exit	

```
Manual page uname(1) line 1 (press h for help or q to quit)
```

```
Type here to search
```



22) whoami

This command prints the username associated with the effective user id.

```
ec2-user@ip-172-31-83-29:~  
C:\Users\smita>bash  
smita1611@APTOP-0BHG75IBL:/mnt/c/Users/smita$ ssh -i ~/.ssh/LabikeySR.pem ec2-user@ec2-54-173-40-182.compute-1.amazonaws.com  
[ec2-user@ip-172-31-83-29 ~]$ whoami  
ec2-user  
[ec2-user@ip-172-31-83-29 ~]$
```

23) man whoami

```
ec2-user@ip-172-31-83-29:~ 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 8.22  
Manual page whoami(1) line 1/37 (END) (press h for help or q to quit). January 2020 WHOAM(1)
```

24) df -h

This command shows the amount of disk available in the file system for the given filename. If no filename is given, the space available on all mounted file system is shown.

```

ec2-user@ip-172-31-83-29:~ 
C:\Users\smita>bash
smita1611@LAPTOP-0BH7S1BL:/mnt/c/Users/smita$ ssh -i ~/.ssh/LabikeySR.pem ec2-user@ec2-54-173-40-182.compute-1.amazonaws.com
[ec2-user@ip-172-31-83-29 ~]$ 
[ec2-user@ip-172-31-83-29 ~]$ lsblk
[ec2-user@ip-172-31-83-29 ~]$ 
[ec2-user@ip-172-31-83-29 ~]$ cat /etc/os-release
NAME="Amazon Linux 2 AMI"
VERSION="2.0.20210222.0"
ID="amazonlinux"
ID_LIKE="rhel,centos"
VERSION_ID="2.0.20210222.0"
PRETTY_NAME="Amazon Linux 2 AMI"
HOME_URL="https://aws.amazon.com/amazon-linux-2/"
[ec2-user@ip-172-31-83-29 ~]$ uname -a
Linux ip-172-31-83-29.ec2.internal 4.14.219-164.354.amzn2.x86_64 #1 SMP Mon Feb 22 21:18:39 UTC 2021 x86_64 x86_64 x86_64 GNU/Linux
[ec2-user@ip-172-31-83-29 ~]$ whoami
ec2-user
[ec2-user@ip-172-31-83-29 ~]$ df -h
Filesystem      Size  Used Avail Use% Mounted on
devtmpfs        482M    0  482M  0% /dev
tmpfs          492M    0  492M  0% /dev/shm
tmpfs          492M  456K  492M  1% /run
tmpfs          492M    0  492M  0% /sys/fs/cgroup
/dev/xvda1       8.0G  1.4G  6.7G  18% /
tmpfs          99M    0   99M  0% /run/user/0
tmpfs          99M    0   99M  0% /run/user/1000
[ec2-user@ip-172-31-83-29 ~]$ 

```

25) man df -h

```

ec2-user@ip-172-31-83-29:~ 
DF(1)                               User Commands
NAME      df - report file system disk space usage
SYNOPSIS  df [OPTION]... [FILE]...
DESCRIPTION
This manual page documents the GNU version of df. df displays the amount of disk space available on the file system containing each file name argument. If no file name is given, the space available on all currently mounted file systems is shown. Disk space is shown in 1K blocks by default, unless the environment variable POSIXLY_CORRECT is set, in which case 512-byte blocks are used.

If an argument is the absolute file name of a disk device node containing a mounted file system, df shows the space available on that file system rather than on the file system containing the device node. This version of df cannot show the space available on unmounted file systems, because on most kinds of systems doing so requires very nonportable intimate knowledge of file system structures.

OPTIONS
Show information about the file system on which each FILE resides, or all file systems by default.

Mandatory arguments to long options are mandatory for short options too.

-a, --all
      include pseudo, duplicate, inaccessible file systems

-B, --block-size=SIZE
      scale sizes by SIZE before printing them; e.g., '-BM' prints sizes in units of 1,048,576 bytes; see SIZE format below

--direct
      show statistics for a file instead of mount point

--total
      produce a grand total

-h, --human-readable
      print sizes in human readable format (e.g., 1K 234M 2G)

-H, --si
      likewise, but use powers of 1000 not 1024

-i, --inodes
      list inode information instead of block usage

Manual page df(1) line 1 (press h for help or q to quit).

```

26) ifconfig -a

It will display all the interfaces which are currently available even if they are down.

```

ec2-user@ip-172-31-83-29:~  

smita1611@LAPTOP-0BH7518L:/mnt/c/Users/smita$ ssh -i ~/ssh/Lab1KeySR.pem ec2-user@ec2-54-173-40-182.compute-1.amazonaws.com  

Amazon Linux 2 AMI  

https://aws.amazon.com/amazon-linux-2/  

[ec2-user@ip-172-31-83-29 ~]$ uname -a  

Linux ip-172-31-83-29.ec2.internal 4.14.219+164.354.amzn2.x86_64 #1 SMP Mon Feb 22 21:18:39 UTC 2021 x86_64 x86_64 GNU/Linux[ec2-user@ip-172-31-83-29 ~]$ whoami  

ec2-user  

[ec2-user@ip-172-31-83-29 ~]$ df -h  

Filesystem      Size  Used Avail Use% Mounted on  

/dev/tmpfs       482M   0  482M  0% /dev  

tmpfs          492M   0  492M  0% /dev/shm  

tmpfs          492M  456K  492M  1% /run  

tmpfs          492M   0  492M  0% /sys/fs/cgroup  

/dev/xvda1     8.0G  1.4G  6.7G  18% /  

tmpfs          99M   0  99M  0% /run/user/0  

tmpfs          99M   0  99M  0% /run/user/1000  

[ec2-user@ip-172-31-83-29 ~]$ ifconfig -a  

-bash: ifconfig: command not found  

[ec2-user@ip-172-31-83-29 ~]$ ifconfig -a  

eth0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST>  mtu 9001  

        inet 172.31.83.29  netmask 255.255.240.0 broadcast 172.31.95.255  

          inet6 fe80::1087:6eff:fe65:6583  prefixlen 64  scoprid 0x20<link>  

        ether 12:87:d6:65:65:83  txqueuelen 1000  (Ethernet)  

          RX packets 39453  bytes 54568343 (52.0 MiB)  

          RX errors 0  dropped 0  overruns 0  frame 0  

          TX packets 3830  bytes 310893 (303.6 KiB)  

          TX errors 0  dropped 0  overruns 0  carrier 0  collisions 0  

lo: flags=73<LOOPBACK,RUNNING>  mtu 65536  

        inet 127.0.0.1  netmask 255.0.0.0  

          inet6 ::1  prefixlen 128  scoprid 0x10<host>  

        loop  txqueuelen 1000  (Local Loopback)  

          RX packets 8  bytes 648 (648.0 B)  

          RX errors 0  dropped 0  overruns 0  frame 0  

          TX packets 8  bytes 648 (648.0 B)  

          TX errors 0  dropped 0  overruns 0  carrier 0  collisions 0  

[ec2-user@ip-172-31-83-29 ~]$
```

27) man ifconfig -a

```

ec2-user@ip-172-31-83-29:~  

IFCONFIG(8)                               Linux System Administrator's Manual                               IFCONFIG(8)  

NAME  

    ifconfig - configure a network interface  

SYNOPSIS  

    ifconfig [-v] [-a] [-s] [interface]  

    ifconfig [-v] interface [aftype] options | address ...  

NOTE  

    This program is obsolete! For replacement check ip addr and ip link. For statistics use ip -s link.  

DESCRIPTION  

    Ifconfig is used to configure the kernel-resident network interfaces. It is used at boot time to set up interfaces as necessary. After that, it is usually only needed when debugging or when system tuning is needed.  

    If no arguments are given, ifconfig displays the status of the currently active interfaces. If a single interface argument is given, it displays the status of the given interface only; if a single -a argument is given, it displays the status of all interfaces, even those that are down. Otherwise, it configures an interface.  

Address Families  

    If the first argument after the interface name is recognized as the name of a supported address family, that address family is used for decoding and displaying all protocol addresses. Currently supported address families include inet (TCP/IP, default), inet6 (IPv6), ax25 (AMPR Packet Radio), ddp (Appletalk Phase 2), ipx (Novell IPX) and netrom (AMPR Packet radio). All numbers supplied as parts in IPv4 dotted decimal notation may be decimal, octal, or hexadecimal, as specified in the ISO C standard (that is, a leading '0x' or '0X' implies hexadecimal; otherwise, a leading '0' implies octal; otherwise, the number is interpreted as decimal). Use of hexadecimal and octal numbers is not RFC-compliant and therefore its use is discouraged.  

OPTIONS  

    -a      display all interfaces which are currently available, even if down  

    -s      display a short list (like netstat -i)  

    -v      be more verbose for some error conditions  

interface  

    The name of the interface. This is usually a driver name followed by a unit number, for example eth0 for the first Ethernet interface. If your kernel supports alias interfaces, you can specify them with eth0:0 for the first alias of eth0. You can use them to assign a second address. To delete an alias interface use ifconfig eth0:0 down. Note: for every scope (i.e. same net with address/netmask combination) all aliases are deleted, if you delete the first (primary).  

    up     This flag causes the interface to be activated. It is implicitly specified if an address is assigned to the interface.  

    down   This flag causes the driver for this interface to be shut down.  

Manual page ifconfig(8) line 1 (press h for help or q to quit)
```

28) netstat

This command will print the network connections, routing table, internet statistics, masquerade connections and multicast membership.

```
[ec2-user@ip-172-31-83-29:~]$ netstat
Active Internet connections (w/o servers)
Proto Recv-Q Send-Q Local Address           Foreign Address         State
tcp        0      236 ip-172-31-83-29.ec2:ssh pool-173-70-217-1:62841 ESTABLISHED
Active UNIX domain sockets (w/o servers)
Proto RefCnt Flags       Type            State          I-Node    Path
unix  3      [ ]     DGRAM           7679  /run/systemd/notify
unix  2      [ ]     DGRAM           7691  /run/systemd/cgroups-agent
unix  5      [ ]     DGRAM           7693  /run/systemd/journal/socket
unix 16     [ ]     DGRAM           7695  /dev/log
unix  2      [ ]     DGRAM           12408  /run/systemd/shutdown
unix  2      [ ]     DGRAM           15597  /var/run/chrony/chronyd.sock
unix  3      [ ]     STREAM CONNECTED   14929  /run/dbus/system_bus_socket
unix  2      [ ]     DGRAM           17617
unix  3      [ ]     STREAM CONNECTED   17366
unix  3      [ ]     STREAM CONNECTED   17367
unix  2      [ ]     DGRAM           17368
unix  3      [ ]     STREAM CONNECTED   15582  /run/systemd/journal/stdout
unix  2      [ ]     DGRAM           13036
unix  3      [ ]     STREAM CONNECTED   15697
unix  2      [ ]     DGRAM           14582
unix  3      [ ]     STREAM CONNECTED   19483
unix  3      [ ]     STREAM CONNECTED   18647
unix  3      [ ]     STREAM CONNECTED   17363
unix  3      [ ]     DGRAM           13166
unix  3      [ ]     DGRAM           13167
unix  3      [ ]     STREAM CONNECTED   17373
unix  3      [ ]     STREAM CONNECTED   15581
unix  3      [ ]     STREAM CONNECTED   17971  /run/systemd/journal/stdout
unix  3      [ ]     STREAM CONNECTED   17370
unix  3      [ ]     STREAM CONNECTED   14851
unix  3      [ ]     STREAM CONNECTED   17410
unix  2      [ ]     DGRAM           12339
unix  3      [ ]     STREAM CONNECTED   19486
unix  2      [ ]     DGRAM           15695
unix  2      [ ]     DGRAM           19994
unix  3      [ ]     STREAM CONNECTED   17265
unix  3      [ ]     STREAM CONNECTED   14852  /run/systemd/journal/stdout
unix  3      [ ]     STREAM CONNECTED   13182  /run/systemd/journal/stdout
unix  3      [ ]     STREAM CONNECTED   19488  /var/lib/amazon/ssm/ipc/health
unix  3      [ ]     STREAM CONNECTED   17376
unix  2      [ ]     DGRAM           16697
unix  3      [ ]     STREAM CONNECTED   19484  /var/lib/amazon/ssm/ipc/termination
unix  3      [ ]     STREAM CONNECTED   52011
unix  3      [ ]     STREAM CONNECTED   52012
```

29) man netstat

NAME

netstat - Print network connections, routing tables, interface statistics, masquerade connections, and multicast memberships

SYNOPSIS

```
netstat [address family options] [--tcp|-t] [--udp|-u] [--udliple|-U] [--sctp|-S] [--raw|-w] [--listening|-l] [--all|-a] [--numeric|-n] [--numeric-hosts]
[--numeric-ports] [--numeric-users] [--symbolic|-N] [--extend|-e|--extend|-e] [--timers|-o] [-program|-p] [--verbose|-v] [--continuous|-c] [--wide|-W]
[delay]
```

```
netstat {--route|-r} [address family options] [--extend|-e|--extend|-e] [--verbose|-v] [--numeric|-n] [--numeric-hosts] [--numeric-ports] [--numeric-users]
[--continuous|-c] [delay]
```

```
netstat {--interfaces|-I|-i} [--all|-a] [--extend|-e] [--verbose|-v] [-program|-p] [--numeric|-n] [--numeric-hosts] [--numeric-ports] [--numeric-users]
[--continuous|-c] [delay]
```

```
netstat {--groups|-g} [--numeric|-n] [--numeric-hosts] [-numeric-ports] [--continuous|-c] [delay]
```

```
netstat {--masquerade|-M} [--extend|-e] [--numeric|-n] [--numeric-hosts] [-numeric-ports] [--numeric-users] [--continuous|-c] [delay]
```

```
netstat {--statistics|-s} [--tcp|-t] [--udp|-u] [--udliple|-U] [--sctp|-S] [--raw|-w] [delay]
```

```
netstat {--version|-V}
```

```
netstat {--help|-h}
```

address family options:

```
[-4|--inet] [-6|--inet6] [--protocol={inet,inet6,unix,ipx,ax25,netrom,ddp, ...}] [--unix|-x] [--inet|--ip|--tcpip] [--ax25] [--x25] [--rose] [--ash]
[--ipx] [--netrom] [--ddp] [--appleTalk] [--econet] [--ec]
```

NOTES

This program is obsolete. Replacement for netstat is ss. Replacement for netstat -r is ip route. Replacement for netstat -i is ip -s link. Replacement for netstat -g is ip maddr.

DESCRIPTION

Netstat prints information about the Linux networking subsystem. The type of information printed is controlled by the first argument, as follows:

(none)

By default, netstat displays a list of open sockets. If you don't specify any address families, then the active sockets of all configured address families will be printed.

--route , -r

30) In the navigation pane, choose **Instances**. In the list of instances, select the instance.

31) Choose **Instance state, Terminate instance**.

The screenshot shows the AWS EC2 Management Console interface. On the left, there's a navigation sidebar with 'Instances' selected. The main area displays a table of instances with one entry: 'i-00c8a481f9051f79e' which is 'Running'. The 'Actions' dropdown menu is open, showing options: Stop instance, Start instance, Reboot instance, Hibernate instance, and Terminate instance.

32) Choose **Terminate** when prompted for confirmation

The screenshot shows the same EC2 console interface as above, but with a modal dialog box in the foreground titled 'Terminate instance?'. The dialog lists the instance ID 'i-00c8a481f9051f79e' and contains a confirmation message: 'To confirm that you want to terminate the instance, choose the terminate button below. Terminating the instance cannot be undone.' At the bottom of the dialog are two buttons: 'Cancel' and 'Terminate'.

https://docs.aws.amazon.com/AWSEC2/latest/UserGuide/EC2_GetStarted.html

<https://docs.aws.amazon.com/AWSEC2/latest/UserGuide/get-set-up-for-amazon-ec2.html#create-a-key-pair>

<https://docs.aws.amazon.com/AWSEC2/latest/UserGuide/AccessingInstancesLinux.html>

<https://docs.aws.amazon.com/AWSEC2/latest/UserGuide/TroubleshootingInstancesConnecting.html>