

Amazon AWS I – Cloud Practitioner

Activity 1: AWS Management Console Clickthrough

Task 1: Register with AWS Academy

Video Link: https://youtu.be/R_V1LgXtYal

Task 2: Launch the Sandbox hands-on environment

- A. Log into AWS Academy and select the course **AWS Academy Cloud Foundations**.
- B. Click on **Modules** from the left menu.
- C. Scroll page down to the end and click on the **Sandbox Environment** link under **Sandbox** section.
- D. Click on **Start Lab** on the top-right corner and a pop-up window will be displayed.
- E. Wait until the lab status changes to **ready** and then close the pop-up window.
- F. Click on **AWS** on the top-right corner to launch an AWS management console in a new tab.

Task 3: Explore AWS Management Console and answer following questions:

- A. Go to the AWS management console.
- B. Click the **Services** menu.
- C. Notice how services are grouped into service categories. For example, the **EC2** service appears in the **Compute** service category.
Question #1: Under which service category does the **IAM** service appear?
Answer: Security, Identity, & Compliance
Question #2: Under which service category does the **Amazon VPC** service appear?
Answer: Networking & Content Delivery
- C. Click the **Amazon VPC** service. Notice that the dropdown menu in the top-right corner displays an AWS Region (for example, it might display *N. Virginia*).
Question #3: Does the subnet you selected exist at the level of the Region or at the level of the Availability Zone?
Answer: Availability Zone
- E. Click **Your VPCs**. An existing VPC is already selected.
Question #4: Does the VPC exist at the level of the Region or the level of the Availability Zone?
Answer: Region Level

Question #5: Which services are global instead of Regional? Check Amazon EC2, IAM, Lambda, and Route 53.

Answer: IAM and Route 53 are global services while Amazon EC2 and Lambda are regional services.

Amazon AWS I – Cloud Practitioner

Activity 2: AWS Cost Estimation

Use [AWS Pricing Calculator](#) to create an estimate for a solution that includes following AWS services:

- **Amazon EC2**
 - o Description: **My Application Server**
 - o Region: **US East (N. Virginia)**
 - o Tenancy: **Shared Instances**
 - o Operating System: **Windows Server**
 - o Workloads: **Constant Usage**
 - o Number of Instances: **2**
 - o EC2 Instances: **r5.xlarge**
 - o Payment Options: **On-Demand**
 - Usage: **100**
 - Usage Type: **Utilization percent per month**
- **Amazon Simple Storage Service (S3)**
 - o Description: **My Storage**
 - o Region: **US East (N. Virginia)**
 - o Select only following storage classes and features
 - **S3 Standard**
 - **Data Transfer**
 - o S3 Standard
 - S3 Standard Storage: **100 GB per month**
 - How will data be moved to S3 standard: **PUT, COPY, POST requests to S3 Standard**
 - S3 Standard Average Object Size: **1 MB**
 - Leave other fields blank
 - o Data Transfer
 - Outbound Data Transfer: **Data transfer to Internet with 100 GB per month**

Paste the screenshot of the estimate summary report here.

Amazon AWS I – Cloud Practitioner

The screenshot shows the AWS Pricing Calculator interface. At the top, there's a summary box for "My Estimate" showing costs:

Upfront cost	Monthly cost	Total 12 months cost
0.51 USD	647.86 USD	7,774.83 USD Includes upfront cost

On the right, there's a "Getting Started with AWS" sidebar with "Get started for free" and "Contact Sales" buttons.

The main area shows a table titled "My Estimate" with the following data:

Service Name	Status	Upfront cost	Monthly cost	Description	Region	Config Summary
Amazon EC2	-	0.00 USD	636.56 USD	My application Server	US East (N. Virginia)	Tenancy (Shared In...)
Amazon Simple St...	-	0.51 USD	11.30 USD	My Storage	US East (N. Virginia)	S3 Standard storag...

At the bottom, there are links for Privacy, Site terms, and Cookie preferences, along with a copyright notice for 2025. The status bar shows system icons like battery level and date/time.

Amazon AWS I – Cloud Practitioner

Activity 3: Lab 1 - Introduction to AWS IAM

Paste screenshot of the AWS Management Console after completing each task.

Task 1: Explore the Users and Groups

The screenshot shows two browser windows side-by-side. The left window is a lab interface from 'labs.vocareum.com' titled 'Lab - 1 Intro'. It contains three numbered steps:

20. Choose the EC2-Admin group link and then choose the Permissions tab.
This Group is slightly different from the other two. Instead of a *Managed Policy*, it has an *Inline Policy*, which is a policy assigned to just one User or Group. Inline Policies are typically used to apply permissions for one-off situations.
21. Choose the plus (+) icon to view the policy details.
This policy grants permission to view (Describe) information about Amazon EC2 and also the ability to Start and Stop instances.
22. Choose the minus icon (-) to hide the policy details.

The right window is the AWS IAM 'User groups' page for the 'EC2-Admin' group. The 'EC2-Admin-Policy' inline policy is selected and expanded, showing its JSON code:

```
1 {  
2   "Version": "2012-10-17",  
3   "Statement": [  
4     {  
5       "Action": [  
6         "ec2:Describe*",  
7         "ec2:StartInstances",  
8         "ec2:StopInstances"  
9       ],  
10      "Resource": [  
11        "*"  
12      ],  
13      "Effect": "Allow"  
14    }  
15  ]  
16 }
```

Amazon AWS I – Cloud Practitioner

Task 2: Add Users to Groups

The screenshot shows a web browser with two tabs open. The left tab is a lab interface from 'labs.vocareum.com' with instructions for Task 2. The right tab is the 'User groups' section of the AWS IAM console.

Left Tab (Lab Interface):

EN-US
29. Using similar steps to the ones above, add user-3 to the EC2-Admin group.
user-3 should now be part of the EC2-Admin group.

30. In the navigation pane on the left, choose User groups.
Each Group should now have a 1 in the Users column, indicating the number of Users in each Group.
If you do not have a 1 beside each group, revisit the above instructions above to ensure that each user is assigned to a User group, as shown in the table in the Business Scenario section.

Right Tab (AWS IAM - User groups):

Identity and Access Management (IAM)
User groups (3) Info Delete Create group

A user group is a collection of IAM users. Use groups to specify permissions for a collection of users.

Group name	Users	Permissions
EC2-Admin	1	Defined
EC2-Support	1	Defined
S3-Support	1	Defined

Task 3: Sign-In and Test Users

In this task, you will test the permissions of each IAM User.

Amazon AWS I – Cloud Practitioner

Task 3: Sign-In and Test Users

The screenshot shows the AWS EC2 Instances page. A green success message at the top states "Successfully initiated stopping of i-0312aff470d76ed14". Below it, a table lists two instances: "Bastion Host" (Running) and "LabHost" (Stopped). The "LabHost" row is highlighted with a red box. On the right side of the screen, there is a sidebar with instructions and a list of numbered steps.

Name	Instance ID	Instance state	Type
Bastion Host	i-09363e2f80c5adc8f	Running	t2.micro
LabHost	i-0312aff470d76ed14	Stopped	t2.micro

EN-US
right of the screen, pull-down the Region menu and select the region that you noted at the start of the lab (for example, N. Virginia).

55. In the **Instance state** menu, choose **Stop instance**.

56. In the **Stop instance** window, choose **Stop**.
The instance will enter the *stopping* state and will shutdown.

57. Close your private browser window.

Submitting your work

58. To record your progress, choose **Submit** at the top of these instructions.

Important: Some of the checks made by the submission process in this lab will only give

Amazon AWS I – Cloud Practitioner

The screenshot shows a web browser window with the URL <https://labs.vocareum.com/main/main.php?m=clabide&mode=s&asnid=3984676&stepid=3984677&hideNavBar=1>. The browser's address bar also displays "Workbench - Vocareum". The top navigation bar includes links for Gmail, YouTube, Maps, Translate, Access Manager, Home, WhatsApp, Homepage - eConestoga, Amazon High Volume Hi..., Homepage - George Br..., Cisco Networking Academ..., Start Lab, End Lab, AWS Details, and Grades.

The main content area contains two numbered steps:

61. Choose **End Lab** at the top of this page, and then select **Yes** to confirm that you want to end the lab.
A panel indicates that *You may close this message box now...*
62. Select the X in the top-right corner to close the panel.

Conclusion

Congratulations! You now have successfully:

- Explored pre-created IAM users and groups
- Inspected IAM policies as applied to the pre-created groups
- Followed a real-world scenario, adding users to groups with specific capabilities enabled
- Located and used the IAM sign-in URL
- Experimented with the effects of policies on service access

© 2023 Amazon Web Services, Inc. and its affiliates. All rights reserved. This work may not be reproduced or redistributed, in whole or in part, without prior written permission from Amazon Web Services, Inc.
Commercial copying, lending, or selling is prohibited.

The right sidebar displays a summary of completed tasks with their scores:

Total score	40/40
TASK 2a - Added user-1 to S3-Support group	5/5
TASK 2b - Added user-2 to EC2-Support group	5/5
TASK 2c - Added user-3 to EC2-Admin group	5/5
TASK 3a - user-1 logged in	5/5
TASK 3b - user-2 logged in	5/5
TASK 3c - user-2 ec2 stop instance attempt	5/5
TASK 3d - user-3 logged in	5/5
TASK 3e - user-3 EC2 stop instance attempt	5/5

Amazon AWS I – Cloud Practitioner

Activity 1: Lab 2 - Build your VPC and Launch a Web Server

Paste screenshot of the AWS Management Console after completing each task.

Task 1: Create Your VPC

The screenshot shows the AWS VPC Resource Map. On the left, the navigation pane includes 'Your VPCs' (which is highlighted with a red box), 'Subnets', 'Route tables', 'Internet gateways', 'Egress-only internet gateways', 'Carrier gateways', 'DHCP option sets', 'Elastic IPs', 'Managed prefix lists', 'NAT gateways', and 'Peering connections'. Under 'Security', there are 'Network ACLs' and 'Security groups'. The main area displays a 'Resource map' with two sections: 'Subnets (2)' and 'Route tables (3)'. The 'Subnets (2)' section shows 'lab-subnet-public1-us-east-1a' (CIDR 10.0.1.0/24, No IPv6) and 'lab-subnet-private1-us-east-1a' (CIDR 10.0.1.0/24, No IPv6). The 'Route tables (3)' section shows 'lab-rtb-public' and 'lab-rtb-private1-us-east-1a' (associated with subnet lab-subnet-private1-us-east-1a). A callout arrow points from the text 'The lab-subnet-private1-us-east-1a private subnet has a CIDR of 10.0.1.0/24, which means that it contains all IP addresses starting with 10.0.1.x.' to the 'lab-rtb-private1-us-east-1a' route table entry.

in your VPC and the Internet.
The `lab-subnet-public1-us-east-1a` public subnet has a CIDR of **10.0.0.0/24**, which means that it contains all IP addresses starting with **10.0.0.x**. The fact the route table associated with this public subnet routes 0.0.0.0/0 network traffic to the internet gateway is what makes it a public subnet.
A **NAT Gateway**, is a VPC resource used to provide internet connectivity to any EC2 instances running in *private* subnets in the VPC without those EC2 instances needing to have a direct connection to the internet gateway.
The `lab-subnet-private1-us-east-1a` private subnet has a CIDR of **10.0.1.0/24**, which means that it contains all IP addresses starting with **10.0.1.x**.

Task 2: Create Additional Subnets

Amazon AWS I – Cloud Practitioner

Task 2: Create Additional Subnets

The screenshot shows the AWS VPC Dashboard. A green success message box is highlighted with a red border, stating: "You have successfully updated subnet associations for rtb-024aaedfd41874265 / lab-rtb-public." Below this, the "Route tables (1/6)" section is shown, with a table listing two route tables: "Work Public Route Table" and "rtb-030bda219ddb47ceb". The "Explicit subnet associations (2)" section is also highlighted with a red border, showing two entries: "lab-subnet-public2" and "lab-subnet-public...".

Task 26: Leave **lab-subnet-public1-us-east-1a** selected, but also select **lab-subnet-public2**.

Task 27: Choose **Save associations**

Your VPC now has public and private subnets configured in two Availability Zones. The route tables you created in task 1 have also been updated to route network traffic for the two new subnets.

The screenshot shows the AWS CloudFormation console. It displays two route tables: "Public Route Table" and "Private Route Table". The "Public Route Table" has a rule for "Destination: Target: 0.0.0.0/0, Target: Internet gateway" and another for "Destination: Target: 10.0.0.0/16, Target: lab-subnet-public2". The "Private Route Table" has a rule for "Destination: Target: 10.0.0.0/16, Target: lab-subnet-private2".

Task 3: Create a VPC Security Group

Amazon AWS I – Cloud Practitioner

Task 3: Create a VPC Security Group

The screenshot shows two browser windows side-by-side. The left window is the AWS VPC console (us-east-1.console.aws.amazon.com) displaying the 'sg-Of2050e330cc5f486 - Web Security Group' details. A green success message box at the top states: 'Security group (sg-Of2050e330cc5f486 | Web Security Group) was created successfully'. Below this, the 'Inbound rules count' is highlighted with a red box, showing '1 Permission entry'. The right window is a lab session from vocareum.com (labs.vocareum.com), titled 'Lab - 2 Build a VPC'. It shows a step 30: 'In the Inbound rules pane, choose Add rule' and step 31: 'Configure the following settings: Type: HTTP, Source: Anywhere-IPv4, Description: Permit web requests'. At the bottom, step 32 is shown: 'Scroll to the bottom of the page and choose Create security group'. A note below it says: 'You will use this security group in the next task when launching an Amazon EC2 instance.'

Task 4: Launch a Web Server Instance

In this task, you will launch an Amazon EC2 instance

Amazon AWS I – Cloud Practitioner

Task 4: Launch a Web Server Instance

The screenshot shows a web browser with two tabs open. The left tab is a self-hosted page at `ec2-54-221-51-196.compute-1.amazonaws.com`, displaying AWS logo, Load Test, and RDS links. It features a table for Meta-Data and a message about Current CPU Load. The right tab is a lab interface titled "Welcome to AWS Technical Essential". It includes a navigation bar with "Start Lab", "End Lab", "AWS Details", and "Details". A dropdown menu shows "EN-US". Below the navigation is a list of tasks:

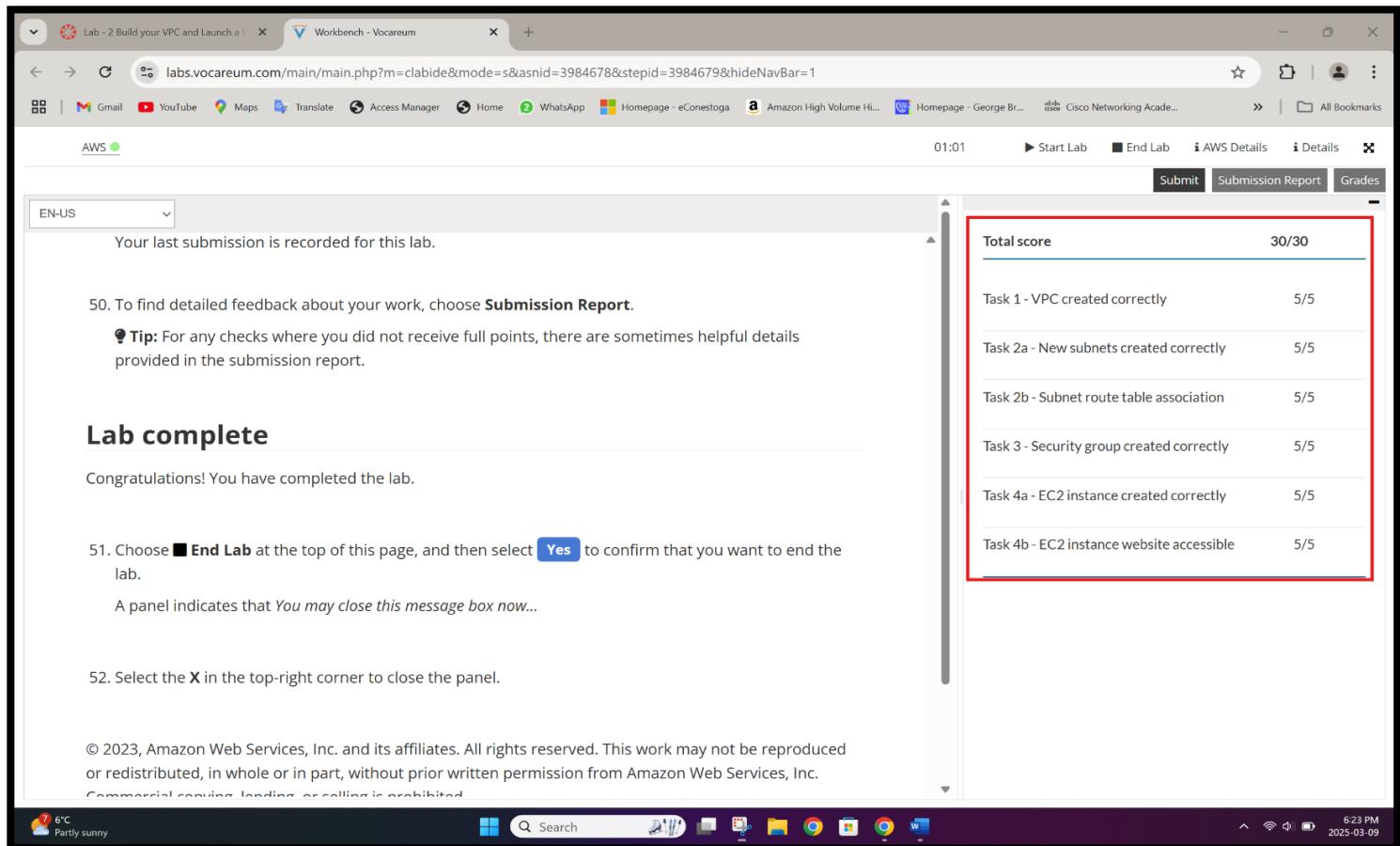
46. Copy the **Public IPv4 DNS** value shown in the **Details** tab at the bottom of the page.
47. Open a new web browser tab, paste the **Public DNS** value and press Enter.

A red box highlights the "Details" tab in the lab interface. Another red box highlights the "Public IPv4 DNS" value in the task list. To the right, a diagram titled "AWS Cloud" illustrates a network architecture with subnets, security groups, and route tables. A red box highlights the "Public Route Table" section.

Submitting your work

48. To record your progress, choose **Submit** at the top of these instructions.

Amazon AWS I – Cloud Practitioner



The screenshot shows a web browser window with the title "Amazon AWS I – Cloud Practitioner". The URL is "labs.vocareum.com/main/main.php?m=clabide&mode=s&asnid=3984678&stepid=3984679&hideNavBar=1". The browser toolbar includes links to Gmail, YouTube, Maps, Translate, Access Manager, Home, WhatsApp, eCestoga, Amazon High Volume Hi..., Homepage - George Br..., Cisco Networking Academ..., Start Lab, End Lab, AWS Details, and Grades.

AWS EN-US Your last submission is recorded for this lab.

50. To find detailed feedback about your work, choose **Submission Report**.

Tip: For any checks where you did not receive full points, there are sometimes helpful details provided in the submission report.

Lab complete

Congratulations! You have completed the lab.

51. Choose **End Lab** at the top of this page, and then select **Yes** to confirm that you want to end the lab.

A panel indicates that *You may close this message box now...*

52. Select the X in the top-right corner to close the panel.

© 2023, Amazon Web Services, Inc. and its affiliates. All rights reserved. This work may not be reproduced or redistributed, in whole or in part, without prior written permission from Amazon Web Services, Inc.
Commercial copying, lending, or selling is prohibited.

6°C Partly sunny 6:23 PM 2025-03-09

Total score 30/30

Task 1 - VPC created correctly	5/5
Task 2a - New subnets created correctly	5/5
Task 2b - Subnet route table association	5/5
Task 3 - Security group created correctly	5/5
Task 4a - EC2 instance created correctly	5/5
Task 4b - EC2 instance website accessible	5/5

Amazon AWS I – Cloud Practitioner

Activity 5: Lab 3 - Introduction to Amazon EC2

Paste screenshot of the AWS Management Console after completing each task.

Task 1: Launch Your Amazon EC2 Instance

The screenshot shows two browser windows side-by-side. The left window is a lab assignment interface from labs.vocareum.com, displaying instructions for launching an EC2 instance. The right window is the AWS Management Console EC2 Instances page, showing the successful launch of an instance named 'web server' with the ID i-078e3ac1855f04f19, which is currently running.

From the Internet.
To view more information, drag the window divider upwards.

At first, the instance will appear in a *Pending* state, which means it is being launched. It will then change to *Initializing*, and finally to *Running*.

20. Wait for your instance to display the following:

- o **Instance State:** ● Running
- o **Status Checks:** 2/2 checks passed

Congratulations! You have successfully launched your first Amazon EC2 instance.

Task 2: Monitor Your Instance

Instances (1/2) Info Last updated less than a minute ago Actions Launch instances Find Instance by attribute or tag (case-sensitive) All states

Name	Instance ID	Instance state
web server	i-078e3ac1855f04f19	Running

i-078e3ac1855f04f19 (web server)
Instance ID: i-078e3ac1855f04f19
Public IPv4 address: 54.226.147.116 [open address]
Private IPv4 addresses: 10.0.1.13
Instance state: Running
IPv6 address: -
Public IPv4 DNS: ec2-54-226-147-116.compute-1.amazonaws.com

Amazon AWS I – Cloud Practitioner

Task 2: Monitor Your Instance

The screenshot shows a browser window with two tabs:

- Left Tab (labs.vocareum.com):** A terminal window with the following text:

```
rc.d/init.d/fn-hug lacks a native system unit file. Automatically generating one now in order to make it more safe and robust. To include a native system unit file, please update package /etc/systemd/system/fn-hug.service with a native unit file. See /usr/share/systemd/system-generator-1.32.731. Sudo service-reload to regenerate configuration files.
```
- Right Tab (us-east-1.console.aws.amazon.com):** The "Get instance screenshot" page for instance i-078e3ac1855f04f19. The screenshot shows a terminal window with the following output:

```
Amazon Linux 2023.6.20250303
Kernel 6.1.129-138.226.amzn2023.x86_64 on an x86_64 (-)

[ 10-0-1-13 login: [ 29.289242] zram_generator::config[2341]: zram0: system has too much memory (949MB), limit is 800MB, ignoring.
[ 30.310352] zram_generator::config[3589]: zram0: system has too much memory (949MB), limit is 800MB, ignoring.
```

A red box highlights the terminal output in the AWS screenshot. A red border surrounds the entire screenshot area.

Task 3: Update Your Security Group and Access the Web Server

Task 3: Update Your Security Group and Access the Web Server

Amazon AWS I – Cloud Practitioner

The screenshot shows a web browser with two tabs open. The left tab is on labs.vocareum.com/main/main...., displaying a configuration interface for an AWS security group. It includes fields for 'Type: HTTP', 'Source: Anywhere-IPv4', and a 'Save rules' button. The right tab is on 54.226.147.116, showing the message 'Hello From Your Web Server!'. The browser interface includes a navigation bar with links like Gmail, YouTube, Maps, Translate, Home, and WhatsApp.

EN-US
and then configure:
o Type: **HTTP**
o Source: Anywhere-IPv4
o Choose **Save rules**

36. Return to the web server tab that you previously opened and refresh the page.
You should see the message *Hello From Your Web Server!*

Congratulations! You have successfully modified your security group to permit HTTP traffic into your Amazon EC2 Instance.

Task 4: Resize Your Instance: Instance Type and EBS Volume

Task 4: Resize Your Instance: Instance Type and EBS Volume

Amazon AWS I – Cloud Practitioner

EN-US Start the RESIZED INSTANCE

You will now start the instance again, which will now have more memory and more disk space.

48. In left navigation pane, choose **Instances**.

49. Select the **Web Server** instance.

50. In the **Instance state** menu, select **Start instance**.

Congratulations! You have successfully resized your Amazon EC2 Instance. In this task you changed your instance type from *t2.micro* to *t2.small*. You also modified your root disk volume from 8 GiB to 10 GiB.

Task 5: Explore EC2 Limits

Amazon EC2 provides different resources that you can use. These resources include images, instances,

Last updated less than a minute ago

Actions Launch instances

Find Instance by attribute or tag (case-sensitive) All states

Name	Instance ID	Instance state
web server	i-078e3ac1855f04f19	Running
Bastion Host	i-00dece3efe46b4d83	Running

i-078e3ac1855f04f19 (web server)

Block devices

Volume ID	Device name	Volume size (GiB)
ol-078c807d42cf3711f	/dev/xvda	10

Volume monitoring (1)

CloudShell Feedback

© 2025, Amazon Web Services, Inc. or its affiliates.

5:06 PM 2025-03-15

Amazon AWS I – Cloud Practitioner

Task 5: Explore EC2 Limits

bar, search for ec2 and choose **Amazon Elastic Compute Cloud (Amazon EC2)**.

53. In the *Find quotas* search bar, search for running on-demand, but do not make a selection. Instead, observe the filtered list of service quotas that match the criteria.

Notice that there are limits on the number and types of instances that can run in a region. For example, there is a limit on the number of *Running On-Demand Standard...* instances that you can launch in this region. When launching instances, the request must not cause your usage to exceed the instance limits currently defined in that region.

If you are the AWS account owner, you can request an increase for many of these limits.

Service Quotas

Dashboard AWS services Quota request history

Organization Quota request template

Service quotas

Request increase at account level

View your applied quota values, default quota values, and request quota increases for quotas. [Learn more](#)

running on-demand 10 matches

Quota name	Applied account-level quota value	AWS default quota value	Utilization
Running On-Demand DL instances	96	0	0
Running On-Demand F instances	64	0	0

CloudShell Feedback Privacy Terms Cookie preferences

Task 6: Test Stop Protection

Amazon AWS I – Cloud Practitioner

Task 6: Test Termination Protection

Note that there is a message that says: Failed to stop the instance i-078e3ac1855f04f19. The instance 'i-078e3ac1855f04f19' may not be stopped. Modify its 'disableApiStop' instance attribute and try again.

This shows that the stop protection that you enabled earlier in this lab is now providing a safeguard to prevent the accidental stopping of an instance. If you really want to stop the instance, you will need to disable the stop protection.

58. In the **Actions** menu, select **Instance settings > Change stop protection**.

59. Remove the check next to **Enable**.

60. Choose **Save**.
You can now stop the instance.

EC2 Instances

Instances (1/2)

i-078e3ac1855f04f19 (web server)

Details

Instance summary

Instance ID: i-078e3ac1855f04f19
Public IPv4 address: 54.91.134.204 | open address
Private IPv4 addresses: 10.0.1.13
IPv6 address:

59. Remove the check next to **Enable**.

60. Choose **Save**.
You can now stop the instance.

61. Select the **Web Server** instance again and in the **Instance state** menu, select **Stop instance**.

62. Choose **Stop**
Congratulations! You have successfully tested stop protection and stopped your instance.

Submitting your work

63. To record your progress, choose **Submit** at the top of these instructions.

EC2 Instances

Instances (1/2)

Name	Instance ID	Instance state
web server	i-078e3ac1855f04f19	Stopped
Bastion Host	i-00dece3efe46b4d83	Running

i-078e3ac1855f04f19 (web server)

Details

Instance summary

Instance ID: i-078e3ac1855f04f19
Public IPv4 address:

Amazon AWS I – Cloud Practitioner

The screenshot shows a web-based lab environment for the Amazon AWS I – Cloud Practitioner course. The URL is <https://labs.vocareum.com/main/main.php?m=clabide&mode=s&asnid=3984680&stepid=3984681&hideNavBar=1>. The sidebar on the left lists various AWS topics, and the main area displays a task list with scores. A red box highlights the score summary.

Total score	25/25
Task 1 - EC2 instance created correctly	5/5
Task 2 - get system log requested	5/5
Task 3 - security group updated	5/5
Task 4 - EC2 instance updated	5/5
Task 6 - Instance stopped on second try	5/5

© 2023, Amazon Web Services, Inc. and its affiliates. All rights reserved. This work may not be reproduced or redistributed, in whole or in part, without prior written permission from Amazon Web Services, Inc.
Commercial copying, lending, or selling is prohibited.

Amazon AWS I – Cloud Practitioner

Activity 6: Lab 4 - Working with EBS

Paste screenshot of the AWS Management Console after completing each task.

Task 1: Create a New EBS Volume

The screenshot shows two browser tabs. The left tab is a lab interface from vocareum.com, and the right tab is the AWS Management Console for the Volumes service in the us-east-1 region. The AWS console shows a list of existing volumes, with one named 'My Volume' selected. The 'Create volume' button is highlighted in orange. A red box highlights the 'Name' column header in the table, and another red box highlights the 'Size' field in the 'Details' tab of the volume's configuration pane.

8. Choose **Create volume**, then configure:

- o **Volume Type:** General Purpose SSD (gp2)
- o **Size (GiB):** 1. **NOTE:** You may be restricted from creating large volumes.
- o **Availability Zone:** Select the same availability zone as your EC2 instance.
- o Choose **Add tag**
- o In the Tag Editor, enter:
 - **Key:** Name
 - **Value:** My volume

9. Choose **Create Volume**

Your new volume will appear in the list, and will move from the *Creating* state to the *Available* state. You may need to choose **refresh** to see your new volume.

Amazon AWS I – Cloud Practitioner

Task 2: Attach the Volume to an Instance

The screenshot shows two browser windows side-by-side. The left window is a Vocareum lab interface at labs.vocareum.com/main/main.php?..., displaying a step-by-step guide for attaching a volume. Step 12 instructs to choose the **Instance** field and select the **Lab** instance. Step 13 shows the **Attach volume** button highlighted with a red box. Below it, a message says "The volume state is now In-use." The right window is the AWS CloudWatch console at us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#Volumes:. It shows a green success message: "Successfully attached volume vol-0fc2271bf7337ea7f to instance i-0bcaa0973b8445c87." The "Volumes (3) Info" section indicates 3 volumes, with 0 recently backed up and 2 total. A summary box states "Fault tolerance for all volumes in this Region". The bottom status bar shows the date as 2025-03-16 and the time as 5:25 PM.

12. Choose the **Instance** field, then select the **Lab** instance.
Note that the **Device** name is set to `/dev/sdf`. Notice also the message displayed that "Newer Linux kernels may rename your devices to `/dev/xvdf` through `/dev/xvdः` internally, even when the device name entered here (and shown in the details) is `/dev/sdf` through `/dev/sdp`."

13. Choose **Attach volume**
The volume state is now *In-use*.

Volumes (3) Info
Last updated less than a minute ago
Saved filter sets **Choose filter set** **Search**

Name	Volume ID	Type	Size
vol-0fc2271bf7337ea7f	vol-0fc2271bf7337ea7f	Standard	10 GiB
vol-0bcaa0973b8445c87	vol-0bcaa0973b8445c87	Standard	10 GiB
vol-0d1e0a0a0a0a0a0a	vol-0d1e0a0a0a0a0a0a	Standard	10 GiB

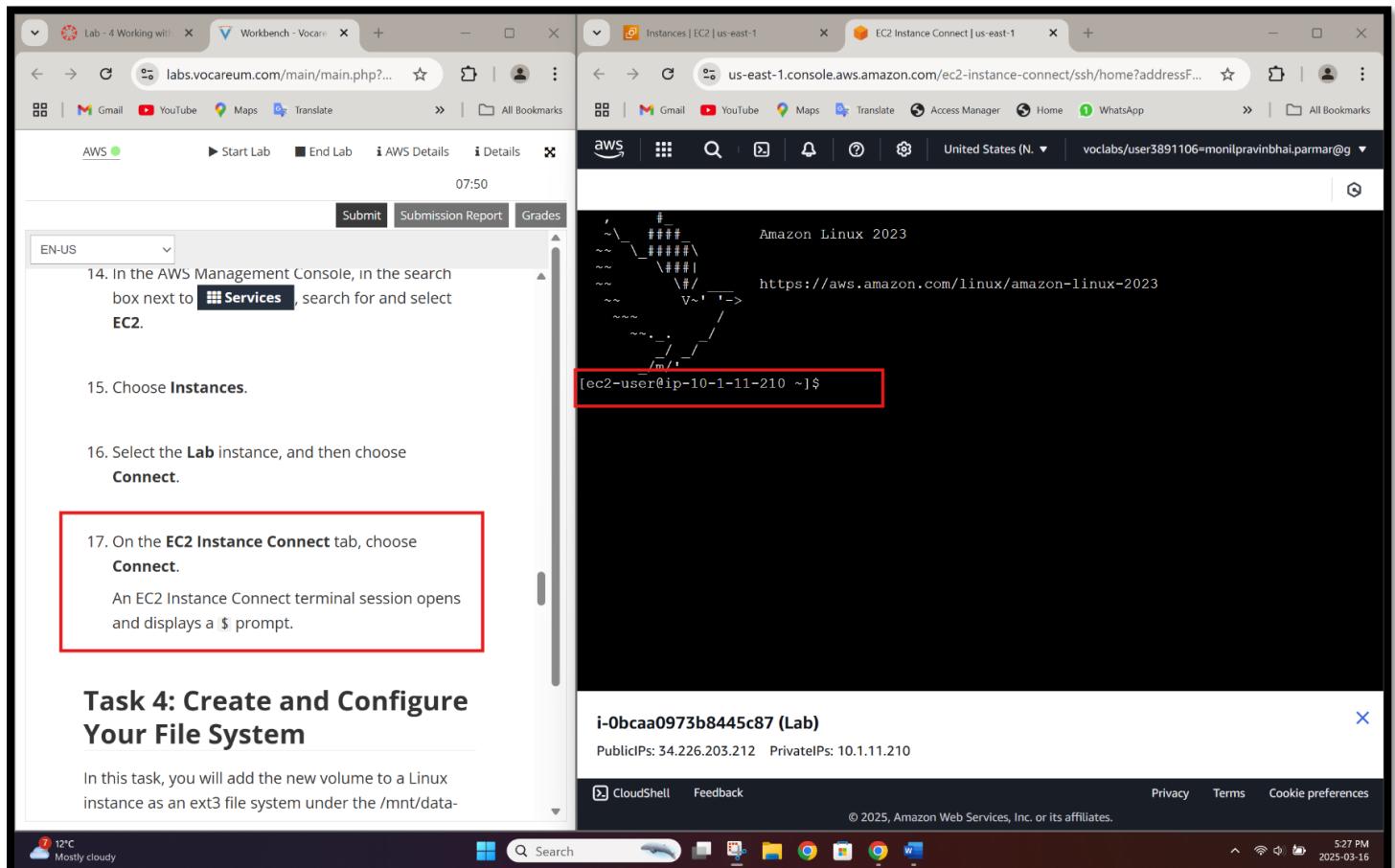
Snapshot summary
Last updated on Sun, Mar 16, 2025, 05:22:41 PM (GMT-04:00)
Recently backed up volumes / Total # volumes **0 / 2**

Data Lifecycle Manager default policy for EBS Snapshots status
No default policy set up | [Create policy](#)

Privacy Terms Cookie preferences © 2025, Amazon Web Services, Inc. or its affiliates.

Amazon AWS I – Cloud Practitioner

Task 3: Connect to Your Amazon EC2 Instance



14. In the AWS Management Console, in the search box next to **Services**, search for and select **EC2**.

15. Choose **Instances**.

16. Select the **Lab** instance, and then choose **Connect**.

17. On the **EC2 Instance Connect** tab, choose **Connect**.
An EC2 Instance Connect terminal session opens and displays a \$ prompt.

Task 4: Create and Configure Your File System

In this task, you will add the new volume to a Linux instance as an ext3 file system under the /mnt/data-

i-0bcaa0973b8445c87 (Lab)
PublicIPs: 34.226.203.212 PrivateIPs: 10.1.11.210

CloudShell Feedback Privacy Terms Cookie preferences
© 2025, Amazon Web Services, Inc. or its affiliates.

Amazon AWS I – Cloud Practitioner

Task 4: Create and Configure Your File System

The screenshot shows a web browser window with multiple tabs. The main content area displays a terminal session on an EC2 instance. The terminal output shows the creation of a journal, mounting of superblocks, and the configuration of an ext3 filesystem with noatime. It also shows the creation of a file named 'file.txt' containing the text 'some text has been written'. A red box highlights the command used to create the file and its contents.

Creating journal (8192 blocks): done
Writing superblocks and filesystem accounting information: done

```
[ec2-user@ip-10-1-11-210 ~]$ sudo mkdir /mnt/data-store
[ec2-user@ip-10-1-11-210 ~]$ sudo mount /dev/sdf /mnt/data-store
[ec2-user@ip-10-1-11-210 ~]$ echo "/dev/sdf /mnt/data-store ext3 defaults,noatime 1 2" | sudo tee -a /etc/fstab
[ec2-user@ip-10-1-11-210 ~]$ cat /etc/fstab
#


i-0bcaa0973b8445c87 (Lab)  
PublicIPs: 34.226.203.212 PrivateIPs: 10.1.11.210



CloudShell Feedback Privacy Terms Cookie preferences © 2025, Amazon Web Services, Inc. or its affiliates.


```

Task 5: Create an Amazon EBS Snapshot

In this task, you will create a snapshot of your EBS volume.

Task 5: Create an Amazon EBS Snapshot

Amazon AWS I – Cloud Practitioner

screenshots, so empty blocks do not occupy any snapshot storage space.

30. In your EC2 Instance Connect session, delete the file that you created on your volume.

```
sudo rm /mnt/data-store/file.txt
```

31. Verify that the file has been deleted.

```
ls /mnt/data-store/
```

Your file has been deleted.

Task 6: Restore the Amazon EBS Snapshot

If you ever wish to retrieve data stored in a snapshot, you can **Restore** the snapshot to a new EBS volume.

12°C Mostly cloudy

Search

CloudShell Feedback

Privacy Terms Cookie preferences

© 2025, Amazon Web Services, Inc. or its affiliates.

5:33 PM 2025-03-16

Amazon AWS I – Cloud Practitioner

Task 6: Restore the Amazon EBS Snapshot

The screenshot shows a web browser with two tabs open. The left tab is titled 'Workbench - Vocareum' and the right tab is titled 'EC2 Instance Connect | us-east-1'. The EC2 tab displays a terminal window with the following content:

```
#  
UID=f3225129-f7e3-4da4-90f7-5035c457993d / xfs defaults,noatime 1 1  
UUID=9A3-6C3B /boot/efi vfat defaults,noatime,uid=0,gid=0,umask=0077,showxattr  
rname=winnt,x-systemd.automount 0 2  
/dev/sdf /mnt/data-store ext3 defaults,noatime 1 2  
[ec2-user@ip-10-1-11-210 ~]$ df -h  
Filesystem Size Used Avail Use% Mounted on  
devtmpfs 4.0M 0 4.0M 0% /dev  
tmpfs 475M 0 475M 0% /dev/shm  
tmpfs 190M 452K 190M 1% /run  
/dev/xvda1 8.0G 1.6G 6.4G 20% /  
tmpfs 475M 0 475M 0% /tmp  
/dev/xvda128 10M 1.3M 8.7M 13% /boot/efi  
tmpfs 95M 0 95M 0% /run/user/1000  
/dev/xvdF 975M 60K 924M 1% /mnt/data-store  
[ec2-user@ip-10-1-11-210 ~]$ sudo sh -c "echo some text has been written > /mnt/data-store/file.txt"  
[ec2-user@ip-10-1-11-210 ~]$ cat /mnt/data-store/file.txt  
some text has been written  
[ec2-user@ip-10-1-11-210 ~]$ sudo rm /mnt/data-store/file.txt  
[ec2-user@ip-10-1-11-210 ~]$ ls /mnt/data-store/  
lost+found  
[ec2-user@ip-10-1-11-210 ~]$ ls /mnt/data-store/  
lost+found  
[ec2-user@ip-10-1-11-210 ~]$ sudo mkdir /mnt/data-store2  
[ec2-user@ip-10-1-11-210 ~]$ sudo mount /dev/sdg /mnt/data-store2  
[ec2-user@ip-10-1-11-210 ~]$ ls /mnt/data-store2/  
file.txt lost+found  
[ec2-user@ip-10-1-11-210 ~]$
```

A red box highlights the line 'file.txt lost+found' in the terminal output.

The terminal window has a title bar 'i-0bcaa0973b8445c87 (Lab)' and status bar 'PublicIPs: 34.226.203.212 PrivateIPs: 10.1.11.210'. Below the terminal, there are links for 'CloudShell', 'Feedback', 'Privacy', 'Terms', and 'Cookie preferences'.

The browser's address bar shows 'us-east-1.console.aws.amazon.com/ec2-instance-connect/ssh/home?addressF...'. The bottom of the screen shows a Windows taskbar with icons for File Explorer, Task View, and other applications.

Submitting your work

44. To record your progress, choose **Submit** at the top of these instructions.

45. When prompted, choose **Yes**.

Amazon AWS I – Cloud Practitioner

The screenshot shows a dual-monitor setup. The left monitor displays the Vocabium platform at labs.vocabium.com/main/main.php?.... It features a sidebar with instructions for creating an EBS volume and a snapshot. A red box highlights the task scores table:

Task	Score
Total score	25/25
Task 1 - Create EBS volume	5/5
Task 2 - Attach volume	5/5
Task 4 - Volume mounted	5/5
Task 5 - Snapshot created	5/5
Task 6 - Snapshot restored	5/5

The right monitor shows an EC2 Instance Connect session at us-east-1.console.aws.amazon.com/ec2-instance-connect/ssh/home?addressF.... It displays a terminal window with the following command history:

```
# UUID=f3225129-f7e3-4da4-90f7-5035c457993d / xfs defaults,noatime 1 1
UUID=9AA3-6C3B /boot/efi vfat defaults,noatime,uid=0,gid=0,umask=0077,show
rtnname=wintnt,x-systemd.automount 0 2
/dev/sdf /mnt/data-store ext3 defaults,noatime 1 2
[ec2-user@ip-10-1-11-210 ~]$ df -h
Filesystem Size Used Avail Use% Mounted on
devtmpfs 4.0M 0 4.0M 0% /dev
tmpfs 475M 0 475M 0% /dev/shm
tmpfs 190M 452K 190M 1% /run
/dev/xvda1 8.0G 1.6G 6.4G 20% /
tmpfs 475M 0 475M 0% /tmp
/dev/xvda128 10M 1.3M 8.7M 13% /boot/efi
tmpfs 95M 0 95M 0% /run/user/1000
/dev/xvdf 975M 60K 924M 1% /mnt/data-store
[ec2-user@ip-10-1-11-210 ~]$ sudo sh -c "echo some text has been written > /mnt/data-store/file.txt"
[ec2-user@ip-10-1-11-210 ~]$ cat /mnt/data-store/file.txt
some text has been written
[ec2-user@ip-10-1-11-210 ~]$ sudo rm /mnt/data-store/file.txt
[ec2-user@ip-10-1-11-210 ~]$ ls /mnt/data-store/
lost+found
[ec2-user@ip-10-1-11-210 ~]$ ls /mnt/data-store/
lost+found
[ec2-user@ip-10-1-11-210 ~]$ sudo mkdir /mnt/data-store2
[ec2-user@ip-10-1-11-210 ~]$ sudo mount /dev/sdg /mnt/data-store2
[ec2-user@ip-10-1-11-210 ~]$ ls /mnt/data-store2/
file.txt lost+found
[ec2-user@ip-10-1-11-210 ~]$
```

The terminal window title is **i-Obcaa0973b8445c87 (Lab)**. At the bottom, it shows PublicIPs: 34.226.203.212 PrivateIPs: 10.1.11.210.

Amazon AWS I – Cloud Practitioner

Activity 7: Lab 5 - Build a Database Server

Paste screenshot of the AWS Management Console after completing each task.

Task 1: Create a Security Group for the RDS DB Instance

The screenshot shows two browser tabs. The left tab is a lab exercise from Vocareum, and the right tab is the AWS VPC console.

Vocareum Lab: A rule to permit access from the Web Security Group.

AWS VPC Console:

- Success Message:** Security group (sg-0aa58bc027651895e | DB Security Group) was created successfully.
- DB Security Group Details:**
 - Security group name:** DB Security Group
 - Description:** Permit access from Web Security Group
 - Owner:** 520812648093
 - Inbound rules count:** 1 Permission entry

Task 2: Create a DB Subnet Group

In this task, you will create a *DB subnet group* that is used to

Amazon AWS I – Cloud Practitioner

Task 2: Create a DB Subnet Group

The screenshot shows a browser window with two tabs. The left tab is titled 'Lab - 5 Build a Database' and the right tab is titled 'Workbench - Vocareum'. The right tab displays the AWS RDS console under the 'Subnet groups' section. A success message at the top right says 'Successfully created DB-Subnet-Group. View subnet group'. Below it, there is a table with one row:

Name	Description	Status	VPC
db-subnet-group	DB Subnet Group	Complete	vpc-02

The left tab shows a lab interface with instructions for creating a DB subnet group. The instructions are:

14. Expand the list of values under **Availability Zones** and select the first two zones: **us-east-1a** and **us-east-1b**.
15. Expand the list of values under **Subnets** and select the subnets associated with the CIDR ranges **10.0.1.0/24** and **10.0.3.0/24**.
These subnets should now be shown in the **Subnets selected** table.
16. Choose **Create**
You will use this DB subnet group when creating the database in the next task.

Task 3: Create an Amazon RDS DB Instance

In this task, you will configure and launch a Multi-AZ Amazon RDS deployment of a MySQL database instance.

Amazon AWS I – Cloud Practitioner

Task 3: Create an Amazon RDS DB Instance

30. Choose **lab-db** (choose the link itself).

You will now need to wait **approximately 4 minutes** for the database to be available. The deployment process is deploying a database in two different Availability zones.

ⓘ While you are waiting, you might want to review the [Amazon RDS FAQs](#) or grab a cup of coffee.

31. Wait until **Info** changes to **Modifying** or **Available**.

32. Scroll down to the **Connectivity & security** section and copy the **Endpoint** field.

It will look similar to: *lab-db.xxxx.us-east-1.rds.amazonaws.com*.

33. Paste the Endpoint value into a text editor. You will use it later in the lab.

Task 4: Interact with Your Database

Amazon AWS I – Cloud Practitioner

Task 4: Interact with Your Database

application will display an **Address Book**.
The Address Book application is using the RDS database to store information.

38. Test the web application by adding, editing and removing contacts.
The data is being persisted to the database and is automatically replicating to the second Availability Zone.

Last name	First name	Phone	Email	Admin
Doe	Jane	010-110-1101	janed@someotheraddress.org	Edit Remove
Johnson	Roberto	123-456-7890	robertoj@someaddress.com	Edit Remove
Parmar	Monil	519-575-8490	monilparmar0@gmail.com	Edit Remove

Submitting your work

39. To record your progress, choose **Submit** at the top of these instructions.

Amazon AWS I – Cloud Practitioner

Assignment 1 (10 points)

AWS Skill Builder is a self-paced digital training platform on AWS. Skill Builder provides 500+ free digital courses that help you build in-demand cloud skills. For this assignment, you are required to complete the free course, **Exam Prep Standard Course: AWS Certified Cloud Practitioner (CLF-C02 - English)**, by following the instructions below:

1. Go to <https://explore.skillbuilder.aws/learn/course/internal/view/elearning/16434/exam-prep-standard-course-aws-certified-cloud-practitioner-clf-c02-english>
2. Click on **SIGN IN TO AWS SKILL BUILDER** and follow the instructions to either create your own AWS Builder ID or sign in if you already have one.
3. Click on the **ENROLL** button.
4. Click on the **START LEARNING NOW** button to start the course.

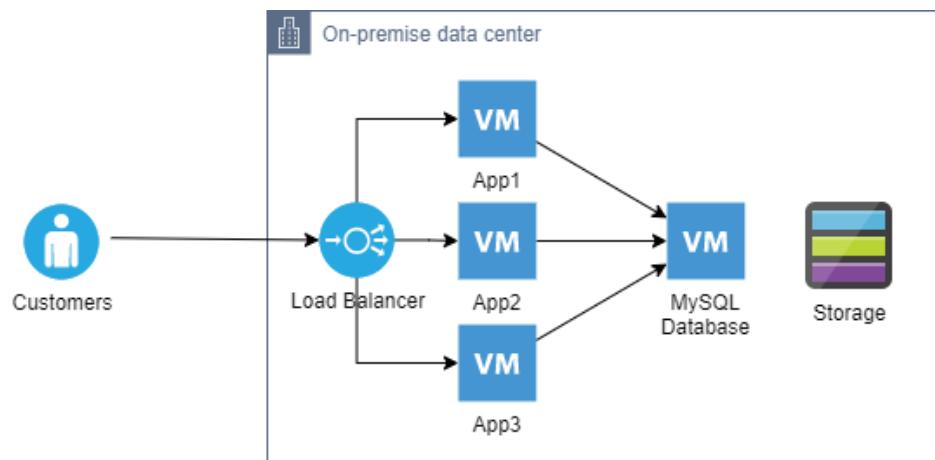
Paste a screenshot of your **Certificate of Completion** after you complete the training.



Assignment 2 (20 points)

My Healthy Eating Inc., a Toronto-based company, sells healthy food online to customers across North America. The company builds and maintains its own e-Commerce website. Over the last few years, the company has experienced rapid growth due to the increasing popularity of their products. Meanwhile, their IT operational cost has also gone up significantly.

Below is a diagram of the company's on-premise data center environment, which is a typical three-tier application, including a load balancer, three application servers running the e-Commerce application, and a MySQL database server. In addition, the company has a total of approximately 2 TB data stored in the data center.



As an AWS certified cloud practitioner, you decide to write a report to the IT manager suggesting the company to migrate its on-premise data center to AWS. In the report, you need to discuss the cloud benefits, identify the AWS services to use and high-level cost estimation, and outline a brief migration plan.

Write your report below:

My Healthy Eating Inc.
Toronto, ON

To: IT Manager, My Healthy Eating Inc.

From: Monil Parmar

Date: March 23, 2025

Subject: Suggestion to Migrate On-Premises Infrastructure to AWS Cloud

INTRODUCTION

My Healthy Eating Inc. has grown quickly, and managing IT in our current on-premise setup is getting harder and more costly. As a cloud computing student, I've learned how AWS can help

Amazon AWS I – Cloud Practitioner

businesses save money and scale more easily. In this report, I'll share the benefits of moving to the cloud, suggest some AWS services, give a basic cost estimate, and explain a simple migration plan based on what I've learned so far.

WHY AWS?

Compared to our current on-premise setup, moving to the cloud with AWS can bring several advantages. Right now, we pay upfront for servers, even if we don't use them all the time. With AWS, we only pay for what we use, which can save money. Our current system also can't easily handle changes in traffic, but AWS can automatically scale up or down based on how many users are visiting the site. On-prem systems need manual backups and maintenance, while AWS offers built-in security, automatic backups, and better uptime. Overall, cloud migration would make our system more flexible, cost-effective, and easier to manage.

SUGGESTED AWS SERVICES AND ESTIMATED COSTS

Our current setup includes a load balancer, several application servers, and a MySQL database. On AWS, we can replicate this structure using cloud-based services that are scalable and easier to manage. Below are the main AWS services I suggest, along with their approximate monthly costs:

- **Amazon EC2** will host the application servers. With Auto Scaling enabled, this service is expected to cost around **\$100 to \$150** per month.
- **Elastic Load Balancing (ELB)** can manage website traffic efficiently and typically costs about **\$20** per month.
- **Amazon RDS (MySQL)** will be used for the relational database. It simplifies tasks like backups and patching, with an estimated monthly cost of **\$60 to \$100**.
- **Amazon S3** is suitable for storing our 2TB of data securely and durably, at approximately **\$46** per month.
- **Amazon CloudWatch** will help monitor performance and resource usage, with costs ranging from **\$10 to \$15**, depending on how detailed the monitoring is.
- **AWS Identity and Access Management (IAM)** is used for secure access control and is generally available at **no extra cost** for standard use.

Altogether, this setup would likely cost between **\$266 and \$361 per month**, depending on actual usage. We might also benefit from AWS Free Tier during the first few months, which could help reduce some of these costs initially.

Migration Plan

Due to the scale of this transition, a full migration all at once may introduce unnecessary risks. Therefore, I recommend following a phased, step-by-step migration approach that allows us to test and validate each stage before moving on.

Amazon AWS I – Cloud Practitioner

The first phase would involve assessing the current application architecture and data. This step is important to understand system dependencies and ensure nothing is overlooked during migration. Once the assessment is complete, we can begin preparing the AWS environment by setting up a Virtual Private Cloud (VPC) along with essential security configurations, such as security groups and IAM roles.

After the environment is ready, we can begin by launching a single EC2 instance and deploying a test version of the e-commerce application. This allows us to confirm that the application functions correctly on AWS before committing to a full-scale move.

Next, we can migrate the MySQL database using AWS Database Migration Service (DMS). This tool enables us to transfer the data to Amazon RDS with minimal downtime. Static files and media can be moved to Amazon S3 using AWS DataSync, which simplifies and automates the transfer process.

Once key components are fully operational and tested in AWS, we can update DNS settings to route live customer traffic to the new infrastructure. Finally, after monitoring performance and confirming system stability, we can decommission the on-premise environment and complete the transition.

This methodical approach helps minimize disruption while ensuring each part of the system is properly validated before going live on AWS.

Migrating to AWS can help the company reduce costs, improve reliability, and scale more easily. This report provides an initial plan, and I'm open to developing it further as needed.

Yours sincerely,

Monil Parmar.