

# CLOUD COMPUTING LABORATORY- 10

## AWS ACADEMY LAB 06

### Amazon Web Services

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Date: 27/03/2022

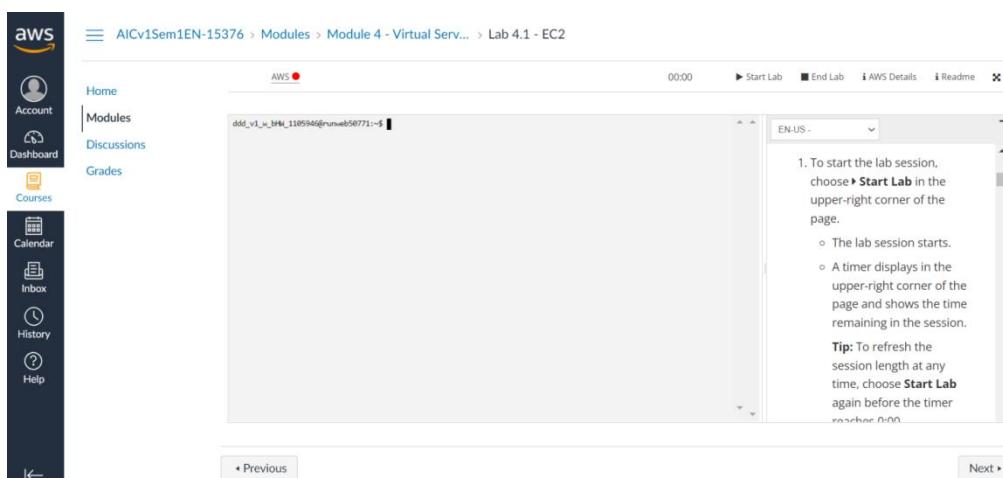
**Aim:** Create an Amazon Elastic Compute Cloud (Amazon EC2) instance and then attach an Amazon Elastic Block Store (Amazon EBS) volume to it.

**Time Duration:** Approximately 20 minutes.

**Requirements:** - AWS account (access to AWS console dashboard)

- Internet connection

1. If we use AWS academy to log in, we go to LAB 6 and click on start lab, allowing the light beside AWS to turn green, before clicking on AWS on the left side, which automatically displays the AWS console dashboard.



2. We go to <https://aws.amazon.com>, click on 'Sign in to Console', and login with our root account.

The image shows two screenshots. On the left is the AWS sign-in page where a user selects 'Root user'. The right side shows the Amazon Lightsail landing page with a cartoon robot icon.

**AWS Sign-in Page:**

- Root user selected.
- IAM user option available.
- Root user email address: 1928228@kiit.ac.in
- Next button.
- Small text at the bottom: By continuing, you agree to the AWS Customer Agreement or other agreement for AWS services, and the Privacy Notice. This site uses essential cookies. See our Cookie Notice for more information.

**Amazon Lightsail Landing Page:**

- Amazon Lightsail logo.
- Text: Lightsail is the easiest way to get started on AWS.
- Learn more button.
- Cartoon robot icon.

# Choose an Amazon Machine Image (AMI) and an instance type

3. Choose the Services menu, locate the Compute services, and select EC2.

The screenshot shows the AWS Management Console with the Services menu open. Under the Compute category, the EC2 service is selected, showing its description as "Virtual Servers in the Cloud". Other services listed include AWS App Runner, Batch, EC2 Image Builder, Elastic Beanstalk, and Lambda.

4. Choose the Launch instance button in the middle of the page, and then select Launch instance from the dropdown menu.

The screenshot shows the AWS EC2 Dashboard. On the left, there's a sidebar with options like EC2 Dashboard, EC2 Global View, Events, Tags, Limits, Instances, and more. The main area features a "Launch instance" button, which is highlighted with a blue border. To the right, there's a "Service health" section showing the status of the EC2 service as "operating normally". A sidebar on the right titled "Explore AWS" provides information about AWS Graviton2 and other cost-reducing tips.

5. To the right of the Amazon Linux 2 AMI (HVM), SSD Volume Type AMI name, choose Select.

The screenshot shows the "Step 1: Choose an Amazon Machine Image (AMI)" step of the AWS Launch Instance Wizard. It lists two AMI options: "Amazon Linux 2 AMI (HVM) - Kernel 5.10, SSD Volume Type" and "Amazon Linux 2 AMI (HVM) - Kernel 4.14, SSD Volume Type". Both are described as "Free tier eligible". To the right, there are "Select" buttons and radio buttons for choosing the 64-bit (x86) or 64-bit (Arm) architecture. A note at the top encourages users to try the new launch instance wizard.

6. For this activity, you will use a t2.micro instance. It should be selected by default. This instance type has 1 virtual central processing unit (CPU) and 1 GiB of memory.

## 7. Choose Next: Configure Instance Details.

Step 2: Choose an Instance Type

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

	Family	Type	vCPUs	Memory (GiB)	Instance Storage (GB)	EBS-Optimized Available	Network Performance	IPv6 Support
<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

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## Configure instance details

8. This page configures the instance to meet your requirements. This includes networking and monitoring settings.
9. For Network, keep the default vpc-XXXXXX (default) (Xs indicate the default VPC identifier).
10. Scroll down, and expand Advanced Details. A field for User data appears.
  - a) Copy the following code and paste it into the User data field.

```
#!/bin/bash
yum update -y
yum -y install httpd
systemctl enable httpd
systemctl start httpd
echo '<html><h1>Hello World!</h1></html>' > /var/www/html/index.html
```

11. This script does the following:

- a) Updates the server
- b) Installs an Apache web server (httpd)
- c) Configures the web server to automatically start on boot
- d) Activates the web server
- e) Creates a simple webpage

Step 3: Configure Instance Details

Configure the instance to suit your requirements. You can launch multiple instances from the same AMI, request Spot instances to take advantage of the lower pricing, assign an access management role to the instance, and more.

Number of instances	1	Launch into Auto Scaling Group
Purchasing option	<input type="checkbox"/> Request Spot instances	
Network	vpc-0224a8d72e255d86e (default)	<input type="checkbox"/> Create new VPC
Subnet	No preference (default subnet in any Availability Zone)	<input type="checkbox"/> Create new subnet
Auto-assign Public IP	Use subnet setting (Enable)	
Hostname type	Use subnet setting (IP name)	
DNS Hostname	<input type="checkbox"/> Enable IP name IPv4 (A record) DNS requests <input checked="" type="checkbox"/> Enable resource-based IPv4 (A record) DNS requests <input type="checkbox"/> Enable resource-based IPv6 (AAAA record) DNS requests	

Cancel Previous Review and Launch Next: Add Storage

## 12. Select Next: Add Storage.

The screenshot shows the AWS EC2 instance configuration process at Step 3: Configure Instance Details. The 'Add file system' button is highlighted. The 'Advanced Details' section includes fields for Enclave, Metadata accessible, Metadata version, Metadata token response hop limit, Allow tags in metadata, and User data. The User data field contains a shell script to install Apache and set up a basic website.

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

Step 3: Configure Instance Details

Add file system   Create new file system

Advanced Details

Enclave  Enable

Metadata accessible  Enabled

Metadata version V1 and V2 (token optional)

Metadata token response hop limit 1

Allow tags in metadata  Disabled

User data  As text

```
#!/bin/bash
yum update -y
yum -y install httpd
systemctl enable httpd
systemctl start httpd
echo '<html><h1>Hello World!</h1></html>' > /var/www/html/index.html
```

Cancel Previous Review and Launch Next: Add Storage

## Add storage and tags

13. Amazon EC2 stores data on a network-attached virtual disk called Amazon Elastic Block Store (Amazon EBS). You will launch the Amazon EC2 instance using a default 8 GiB disk volume. This will be your root volume (also known as a boot volume).

14. Choose Next: Add Tags.

15. Tags help you categorize your AWS resources in different ways; for example, by purpose, owner, or environment. This is useful when you have many resources of the same type—you can quickly identify a specific resource based on the tags you have assigned to it. Each tag consists of a key and a value, which you define.

16. Select Add Tag, and then configure:

Key: Name

Value: Web Server

17. Select Next: Configure Security Group.

The screenshot shows the AWS EC2 instance configuration process at Step 4: Add Storage. The 'Add New Volume' button is visible. The 'Volume Type' section shows a single volume entry for a root volume.

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

Step 4: Add Storage

Root   /dev/xvda   snap-0c1ac78aec1c4204c   8   General Purpose SSD (gp2)   100 / 3000   N/A   Delete on Termination   Encryption

Add New Volume

Free tier eligible customers can get up to 30 GB of EBS General Purpose (SSD) or Magnetic storage. Learn more about free usage tier eligibility and usage restrictions.

Shared file systems

Cancel Previous Review and Launch Next: Add Tags

**Step 5: Add Tags**

A tag consists of a case-sensitive key-value pair. For example, you could define a tag with key = Name and value = Webserver.

A copy of a tag can be applied to volumes, instances or both.

Tags will be applied to all instances and volumes. [Learn more](#) about tagging your Amazon EC2 resources.

Key (128 characters maximum)      Value (256 characters maximum)

Instances      Volumes      Network Interfaces

Name      Web Server

Add another tag (Up to 50 tags maximum)

Cancel Previous Review and Launch Next: Configure Security Group

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## Configure the security group

18. A security group acts as a virtual firewall that controls the traffic for one or more instances. When you launch an instance, you associate one or more security groups with the instance. You add rules to each security group that allow traffic to or from its associated instances. You can modify the rules for a security group at any time. The new rules are automatically applied to all instances that are associated with the security group.
19. Configure a new security group:
  - a) Keep the default selection Create a new security group.
  - b) Security group name: Clear the text and enter Web Server
  - c) Description: Clear the text and enter Security group for my web server
20. In this activity, you will not log in to your instance using Secure Shell (SSH). Remove SSH access to improve the security of your instance.
21. Delete the existing rule by selecting the X icon.

**Step 6: Configure Security Group**

A security group is a set of firewall rules that control the traffic for your instance. On this page, you can add rules to allow specific traffic to reach your instance. For example, if you want to set up a web server and allow Internet traffic to reach your instance, add rules that allow unrestricted access to the HTTP and HTTPS ports. You can create a new security group or select from an existing one below. [Learn more](#) about Amazon EC2 security groups.

Assign a security group:  Create a new security group  
 Select an existing security group

Security group name: Web Server

Description: Security group for my web server

Type	Protocol	Port Range	Source	Description

This security group has no rules

Add Rule

**Warning**  
 You will not be able to connect to this instance as the AMI requires port(s) 22 to be open in order to have access. Your current security group doesn't have port(s) 22 open.

Cancel Previous Review and Launch

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22. Select Review and Launch.

## Review the instance and launch

23. This is the final step to launch your EC2 instance. The Review page displays the configuration you have selected for the instance you are about to launch.
24. Review your instance launch details before continuing. If you missed a step or selected an incorrect setting, you can go back and edit changes for each section.
25. When you are finished reviewing the launch details, select Launch.

The screenshots show the 'Step 7: Review Instance Launch' page across three different stages of configuration:

- Initial Configuration (Top Screenshot):** Shows the 'AMI Details' section with 'Amazon Linux 2 AMI (HVM) - Kernel 5.10, SSD Volume Type - ami-0c02fb55956c7d316'. It indicates the instance is 'Free tier eligible' and provides details about the root device type (ebs) and virtualization type (hvm).
- Instance Type Configuration (Middle Screenshot):** Shows the 'Instance Type' table for a t2.micro instance. The table includes columns for Instance Type, ECUs, vCPUs, Memory (GiB), Instance Storage (GB), EBS-Optimized Available, and Network Performance. The instance has 1 vCPU, 1 GiB of memory, and EBS storage.
- Security Groups Configuration (Bottom Screenshot):** Shows the 'Security Groups' section where a security group named 'Web Server' is selected. The table lists rules for this group, noting 'This security group has no rules'.

Each screenshot includes a navigation bar at the top with 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'. A 'Launch' button is prominently displayed in the bottom right corner of each screen.

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

### Step 7: Review Instance Launch

Assign Public IP	Use subnet setting (Enable)
Assign IPv6 IP	Use subnet setting (Enable)
Hostname type	IP name
Resource-based IPv4 DNS	Enabled
Resource-based IPv6 DNS	Disabled

**Storage**

Volume Type	Device	Snapshot	Size (GiB)	Volume Type	IOPS	Throughput (MB/s)	Delete on Termination	Encrypted
Root	/dev/xvda	snap-0c1ac78aec1c4204c	8	gp2	100 / 3000	N/A	Yes	Not Encrypted

**Tags**

Key	Value	Instances	Volumes	Network Interfaces
Name	Web Server			

Cancel Previous Launch

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26. Choose the Choose an existing key pair drop-down and select Proceed without a key pair.
- Select I acknowledge that....
  - Select Launch Instances.

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

### Step 7: Review Instance Launch

Assign Public IP	Use subnet setting (Enable)
Assign IPv6 IP	Use subnet setting (Enable)
Hostname type	IP name
Resource-based IPv4 DNS	Enabled
Resource-based IPv6 DNS	Disabled

**Storage**

Volume Type	Device
Root	/dev/xvda

**Tags**

Key
Name

**Select an existing key pair or create a new key pair**

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. Amazon EC2 supports ED25519 and RSA key pair types.

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](#).

Proceed without a key pair  I acknowledge that without a key pair, I can connect to this instance only by using EC2 Instance Connect or if I know the password built into the AMI. Note that EC2 Instance Connect is only supported on Amazon Linux 2 and Ubuntu. [Learn more](#).

Cancel Launch Instances

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27. Your instance will now be launched.

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### Launch Status

 Initiating Instance Launches

Please do not close your browser while this is loading

Creating security groups... Successful

Initiating launches...

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## 28. Select View Instances.

- The instance will appear in the Pending state, which means it is being launched. It will then change to Running, which indicates that the instance has started booting. It takes a few minutes for the instance to boot.

## 29. Before you continue, wait for your instance to display the following:

- Instance state: Running
- Status check: 2/2 checks passed

The screenshot shows the AWS Launch Status page. At the top, there is a message: "Your instances are now launching. The following instance launches have been initiated: i-064c11866706092ab. View launch log". Below this, there is a section titled "Get notified of estimated charges" with a sub-section "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](#)
- [Learn about AWS Free Usage Tier](#)
- [Amazon EC2: User Guide](#)
- [Amazon EC2: Discussion Forum](#)

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The screenshot shows the AWS Instances page. On the left, there is a sidebar with "New EC2 Experience" and "Instances (1) Info". The main area displays a table with one row for a "Web Server" instance. The instance details are: Name: Web Server, Instance ID: i-064c11866706092ab, Instance state: Running, Instance type: t2.micro, Status check: Initializing, Alarm status: No alarms. A "Launch Instances" button is visible at the top right of the table. Below the table, a modal window titled "Select an instance" is open, showing the same instance information.

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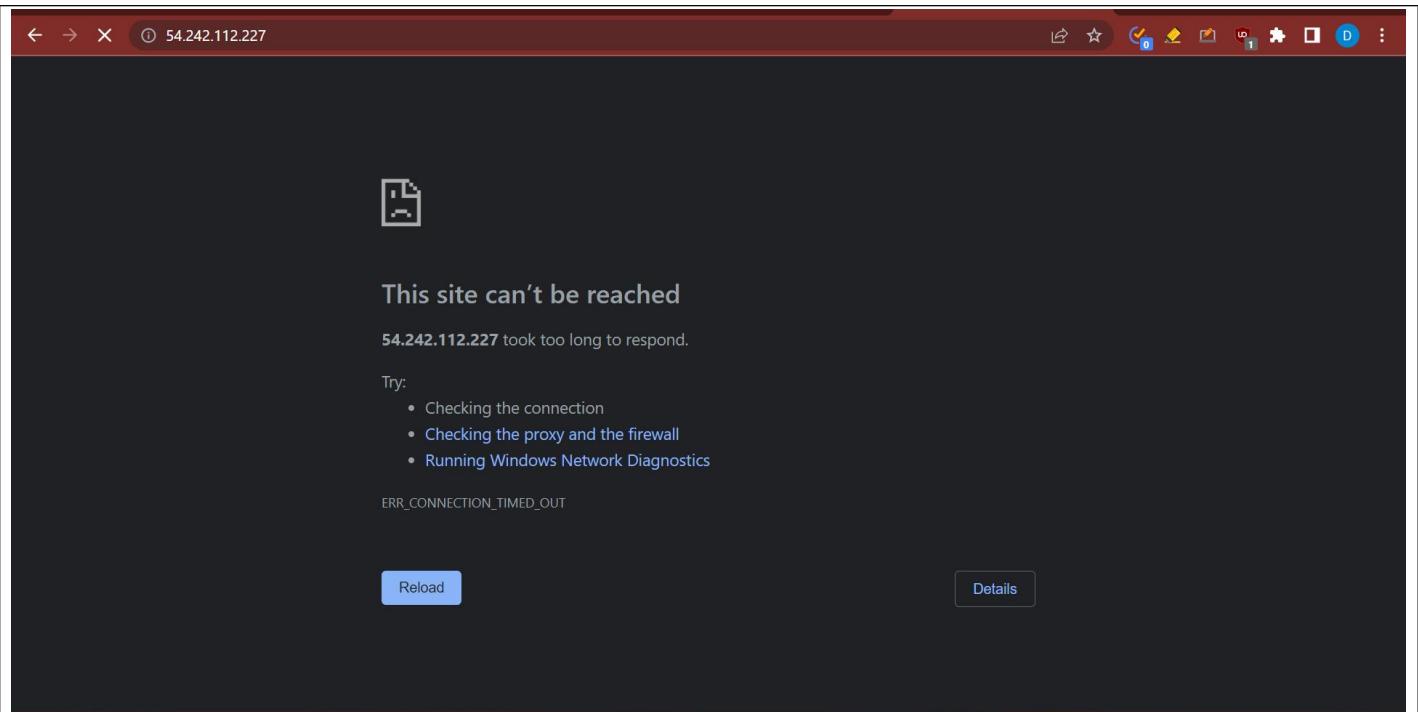
The screenshot shows the AWS EC2 Instances page. On the left sidebar, under the 'Instances' section, 'Instances' is selected. In the main content area, the title 'Instances (1/1)' is followed by a table with one row. The table columns are 'Name', 'Instance ID', 'Instance state', 'Instance type', 'Status check', 'Alarm status', and 'Ava'. The 'Name' column shows 'Web Server', 'Instance ID' shows 'i-064c11866706092ab', 'Instance state' shows 'Running', 'Instance type' shows 't2.micro', 'Status check' shows '2/2 checks passed', 'Alarm status' shows 'No alarms', and 'Ava' shows 'us-east-1'. Below the table, a modal window titled 'Instance: i-064c11866706092ab (Web Server)' is open. It has tabs for 'Details', 'Security', 'Networking', 'Storage', 'Status checks', 'Monitoring', and 'Tags'. The 'Details' tab is selected. Under 'Instance summary', there are two rows: 'Instance ID' (i-064c11866706092ab (Web Server)) and 'IPv6 address'. To the right of these are 'Public IPv4 address' (54.242.112.227), 'Private IPv4 addresses' (172.31.17.236), 'Instance state' (Running), and 'Public IPv4 DNS' (202.102.10.236). A tooltip 'Copied' appears over the Public IPv4 address field.

## Access your EC2 instance

30. When you launched your EC2 instance, you provided a script that installed a web server and created a simple webpage. In this task, you will try to access the content from the web server.
31. Select the Web Server instance, choose the Details tab, and copy the Public IPv4 address value of your instance to your clipboard.

The screenshot shows the same AWS EC2 Instances page as before, but now the Public IPv4 address '54.242.112.227' is highlighted with a green box and a tooltip 'Copied' is displayed above it. The rest of the interface is identical to the previous screenshot.

32. Open a new tab in your web browser, paste the public IP address you just copied, and press Enter.
33. The webpage does not load. You must update the security group to be able to access the page.



## Update the security group

34. You are not able to access your web server because the security group is not permitting inbound traffic on port 80, which is used for HTTP web requests. In this task, you update the security group.
35. Return to the EC2 Management Console browser tab.
36. In the left navigation pane, under Network & Security, choose Security Groups.

Name	Security group ID	Security group name	VPC ID	Description
sg-027fcac31863ad652	default	vpc-0224a8d72e255d86e	default VPC sec	
sg-038d98b0320abc9d0	Web Server	vpc-0224a8d72e255d86e	Security group f	

Name	Security group rule...	IP version	Type	Protocol
No security group rules found				

37. Select the Web Server security group, which you created when launching your EC2 instance.
38. In the lower pane, choose the Inbound rules tab.
  - a) Create an inbound rule.
  - b) Choose Edit inbound rules, and then choose Add rule.

The screenshot shows the AWS Management Console interface for managing security groups. The top navigation bar includes the AWS logo, a search bar, and account information: 'N. Virginia' and 'voclabs/user1868139=1928228@kiit.ac.in @ 8792-4625-9700'. The main content area is titled 'Edit inbound rules' with a sub-link 'Info'. A message states 'This security group has no inbound rules.' Below this is a button labeled 'Add rule'. At the bottom right are 'Cancel', 'Preview changes', and a prominent orange 'Save rules' button. The footer contains standard links: Feedback, English (US), © 2022, Amazon Web Services, Inc. or its affiliates., Privacy, Terms, and Cookie preferences.

39. Configure the following:
  - a) Type: HTTP
  - b) Source: Anywhere
  - c) Choose Save rules
  - d) The new inbound HTTP rule creates an entry for IPv4 IP (0.0.0.0/0) and IPv6 IP addresses (::/0).

The screenshot shows the same AWS Security Groups interface after adding a new rule. The 'Inbound rules' table now contains one row for a new rule: 'Security group rule ID' is blank, 'Type' is set to 'HTTP' (with a dropdown arrow), 'Protocol' is 'TCP', 'Port range' is '80', 'Source' is 'Anywhere' (with a dropdown arrow), and 'Description - optional' is empty. To the right of the source field is a 'Delete' button with a trash icon. At the bottom right are 'Cancel', 'Preview changes', and a prominent orange 'Save rules' button. The footer links are identical to the previous screenshot.

40. Return to the tab that you used to try to connect to the web server, and refresh the page.
41. The page should display the message Hello World!

The screenshot shows the AWS EC2 Management Console. On the left, the navigation pane includes options like New EC2 Experience, EC2 Dashboard, EC2 Global View, Events, Tags, Limits, Instances (selected), Instances (New), Instance Types, Launch Templates, Spot Requests, Savings Plans, Reserved Instances (New), Dedicated Hosts, Scheduled Instances, and Capacity Reservations.

The main content area displays a success message: "Inbound security group rules successfully modified on security group (sg-038d98b0320abc9d0 | Web Server) Details". Below this is a "Security Groups (1/2)" table:

Name	Security group ID	Security group name	VPC ID	Description
sg-027fcac31863ad652	default	vpc-0224a8d72e255d86e	default VPC sec	
sg-038d98b0320abc9d0	Web Server	vpc-0224a8d72e255d86e	Security group f	

Below the table is an "Inbound rules (1/1)" section:

Name	Security group rule...	IP version	Type	Protocol

At the bottom of the page, there's a "Hello World!" message and a link to "Attach an EBS volume to your EC2 instance".

## Attach an EBS volume to your EC2 instance

42. Return to the EC2 Management Console browser tab.
43. In the left navigation pane, under Instances, choose Instances.
44. Select the Web Server instance, and note the Availability Zone in which your instance is running. Your EBS volume will need to be in the same Availability Zone.

The screenshot shows the AWS EC2 Management Console. The left navigation pane includes Reserved Instances (New), Dedicated Hosts, Scheduled Instances, Capacity Reservations, Images (selected), AMIs (New), AMI Catalog, Elastic Block Store (selected), Volumes (New), Snapshots (New), Lifecycle Manager (New), Network & Security, Security Groups, Elastic IPs, Placement Groups, Key Pairs, and Network Interfaces.

The main content area shows the "Instances (1/1)" table:

Instance type	Status check	Alarm status	Availability Zone	Public IPv4 DNS	Public IPv4 ...	Elastic IP
t2.micro	2/2 checks passed	No alarms	+ us-east-1b	ec2-54-242-112-227.co...	54.242.112.227	-

Below the table, the "Instance: i-064c11866706092ab (Web Server)" details are shown:

Details		Security	Networking	Storage	Status checks	Monitoring	Tags
<b>Instance summary</b> <a href="#">Info</a>							
Instance ID	i-064c11866706092ab (Web Server)	Public IPv4 address			Private IPv4 addresses		
		54.242.112.227   open address			172.31.17.236		
IPv6 address		Instance state			Public IPv4 DNS		

45. In the left navigation pane, under Elastic Block Store, select Volumes.

46. Select Create Volume.

Volumes (1)

Name	Volume ID	Type	Size	IOPS	Throughput	Snapshot
Web Server	vol-032250e57bf8b3df5	gp2	8 GiB	100	-	snap-0c1ac78...

Select a volume above

Create volume

47. For Size, enter 1 to create a volume with 1 GiB.

48. For Availability Zone, select the same Availability Zone that your EC2 instance is running in.

Volume settings

Volume type [Info](#)  
General Purpose SSD (gp2)

Size (GiB) [Info](#)  
1

IOPS [Info](#)  
100 / 3000

Throughput (MiB/s) [Info](#)  
Not applicable

Availability Zone [Info](#)  
us-east-1b

Snapshot ID - optional [Info](#)  
Don't create volume from a snapshot

Create volume

49. Select Create Volume.

50. Select Close.

Tags - optional [Info](#)

A tag is a label that you assign to an AWS resource. Each tag consists of a key and an optional value. You can use tags to search and filter your resources or track your AWS costs.

No tags associated with the resource.

Add tag

You can add 50 more tags.

Create volume

51. The new volume appears in the volumes list with a state of available.

The screenshot shows the AWS EC2 Volumes page. A green success message at the top says "Successfully created volume vol-0bd3937fc2ee89fc3.". The main table lists two volumes:

Volume ID	Snapshot	Created	Availability Zone	Volume state	Alarm status	Attached Instances
vol-0bd3937fc2ee89fc3	snap-0c1ac78...	2022/03/23 09:20 GMT+5:30	us-east-1b	In-use	No alarms	i-064c1186f
-	-	2022/03/23 09:36 GMT+5:30	us-east-1b	Available	No alarms	-

The left sidebar shows the "Instances" section with various options like Instances, Instance Types, and Launch Templates.

52. Select the new volume. Then, choose Actions, and Attach Volume.

The screenshot shows the AWS EC2 Volumes page with the new volume "vol-0bd3937fc2ee89fc3" selected. The Actions menu is open on the right, showing options like Modify volume, Create snapshot, and Attach volume.

The table shows the following volumes:

Name	Volume ID	Type	Size	IOPS
Web Server	vol-032250e57bf8b3df5	gp2	8 GiB	100
-	vol-0bd3937fc2ee89fc3	gp2	1 GiB	100

The Volume ID "vol-0bd3937fc2ee89fc3" is highlighted at the bottom of the table.

53. Select the Instance drop-down menu, and then select your EC2 instance. The device will automatically populate.

54. Select Attach.

The screenshot shows the "Attach Volume" dialog box. It has the following fields:

- Volume ID: vol-0bd3937fc2ee89fc3
- Availability Zone: us-east-1b
- Instance Info: dropdown set to i-064c11866706092ab
- Device name Info: /dev/sdf
- A note: "Newer Linux kernels may rename your devices to /dev/xvdf through /dev/xvdp internally, even when the device name entered here (and shown in the details) is /dev/sdf through /dev/sdp."
- Buttons: Cancel and Attach volume

55. The state of the volume changes to in-use. The new volume is now attached to your EC2 instance.

The screenshot shows the AWS EBS Volumes page. A green success message at the top states: "Successfully attached volume vol-0bd3937fc2ee89fc3 to instance i-064c11866706092ab." The main table displays two volumes:

Throughput	Snapshot	Created	Availability Zone	Volume state	Alarm status
-	snap-0c1ac78...	2022/03/23 09:20 GMT+5:...	us-east-1b	In-use	No alarms
-	-	2022/03/23 09:36 GMT+5:...	us-east-1b	In-use	No alarms

A message below the table says "Select a volume above".

The screenshot shows the AWS EBS Volumes page. A green success message at the top states: "Successfully attached volume vol-0bd3937fc2ee89fc3 to instance i-064c11866706092ab." The main table displays two volumes with their attached instances:

Attached Instances	Volume state	Encryption	KMS key ID	KMS key alias	Multi-Atta...
i-064c11866706092ab (W...)	Okay	Not encrypted	-	-	No
i-064c11866706092ab (W...)	Okay	Not encrypted	-	-	No

A message below the table says "Select a volume above".

## Lab complete

The screenshot shows the AI CV1 Sem1 EN-15376 dashboard. A modal dialog box asks: "Are you sure you want to end the lab? If you choose yes, all the resources and data that have been configured in your AWS account will be permanently deleted." There are "Yes" and "No" buttons. A note at the bottom right says: "In the upper-right corner of the page, choose End Lab to end the lab session. You can return to your lab session later by clicking the End Lab button again." The left sidebar includes links for Home, Modules, Discussions, Grades, Courses, and Calendar.