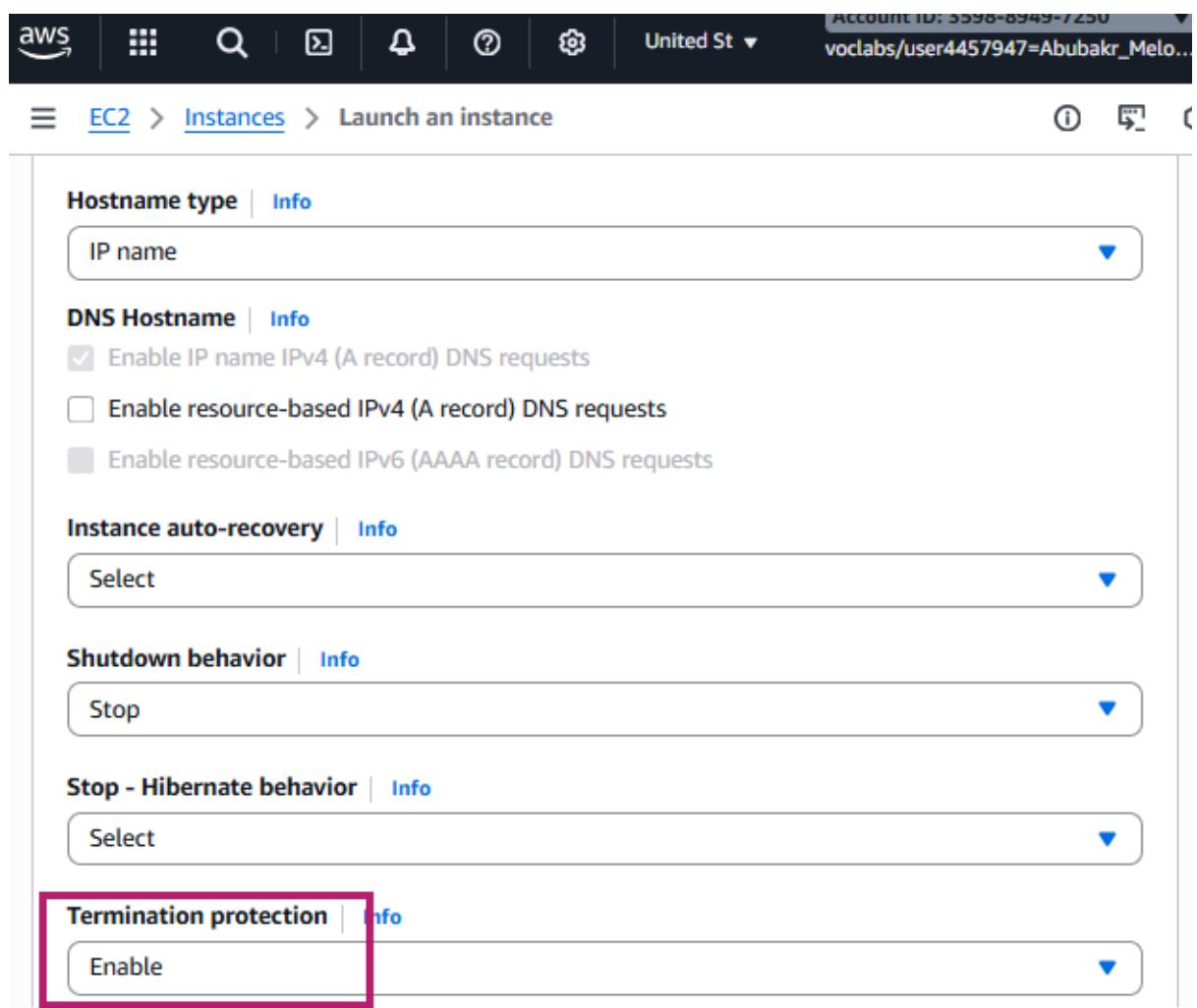


(Module 6 Lab - Introduction to Amazon EC2)

- Screenshot successfully launched Amazon EC2 instance 'Web Server' with termination protection enabled and user data script for web server deployment.



The screenshot shows the AWS CloudFormation console with the URL [voclabs/user4457947=Abubakr_Melouda](#). The page displays the 'Launch an instance' step of a CloudFormation stack creation. A yellow warning box at the top states: 'For V2 requests, you must include a session token in all instance metadata requests. Applications or agents that use V1 for instance metadata access will break.' Below this, the 'User data - optional' section is highlighted with a red box. It contains a 'Choose file' button and a text input field containing the following shell script:

```
#!/bin/bash
dnf install -y httpd
systemctl enable httpd
systemctl start httpd
echo '<html><h1>Hello From Your Web Server!</h1></html>' > /var/www/html/index.html
```

Instances (1/2) [Info](#)

Last updated less than a minute ago

[Connect](#) [Instance state ▾](#) [Actions ▾](#)

[Launch instances](#)

Find Instance by attribute or tag (case-sensitive)

All states ▾

Name	Instance ID	Instance state	Instance type
Bastion Host	i-026f1bceec7f8e35e	Running	t2.micro
Web Server	i-0d698926e1dfc7315	Running	t2.micro

- Screenshot EC2 instance successfully running with all status checks passed, ready for web server deployment.

Instances (1/2) [Info](#)

Last updated 6 minutes ago

[Connect](#) [Actions ▾](#) [Launch instances ▾](#)

Find Instance by attribute or tag (case-sensitive)

All states ▾

Name	Instance ID	Instance state	Instance type
Bastion Host	i-026f1bceec7f8e35e	Running	t2.micro
Web Server	i-0d698926e1dfc7315	Running	t2.micro

i-0d698926e1dfc7315 (Web Server)

[Details](#) [Status and alarms](#) [Monitoring](#) [Security](#) [Networking](#)

Status checks [Info](#) [Actions ▾](#)

Status checks detect problems that may impair i-0d698926e1dfc7315 (Web Server) from running your applications.

System status checks	Instance status checks
✓ System reachability check passed	✓ Instance reachability check passed

[Metrics](#) [Alarms](#)

- Screenshot EC2 instance system log showing successful Apache HTTP server installation from user data script.

The screenshot shows the AWS Instance diagnostics System log page for an EC2 instance. The log output is as follows:

```

[ 26.230150] cloud-init[2173]: Installing: httpd
[ 26.234482] cloud-init[2173]: httpd 2.4.65-1.amzn2023.0.2 amznlinux 47 k
[ 26.251417] cloud-init[2173]: installing dependencies:
[ 26.251417] cloud-init[2173]:   httpd-util x86_64 1.7.5-1.amzn2023.0.4 amznlinux 129 k
[ 26.251417] cloud-init[2173]:   apr-util x86_64 1.6.3-1.amzn2023.0.2 amznlinux 97 k
[ 26.263340] cloud-init[2173]:   apr-util-libs x86_64 1.6.3-1.amzn2023.0.2 amznlinux 13 k
[ 26.271384] cloud-init[2173]:   generic-logos-httdp noarch 18.0.0-12.amzn2023.0.3 amznlinux 19 k
[ 26.271384] cloud-init[2173]:   httpd-tools x86_64 2.0.4-1.amzn2023.0.2 amznlinux 147 k
[ 26.290081] cloud-init[2173]:   libxml2 x86_64 2.9.9-1.amzn2023.0.2 amznlinux 11 k
[ 26.308020] cloud-init[2173]:   mod-filesystem noarch 2.4.65-1.amzn2023.0.2 amznlinux 81 k
[ 26.314376] cloud-init[2173]:   libuv0.11 x86_64 1.0.9-4.amzn2023.0.2 amznlinux 315 k
[ 26.320249] cloud-init[2173]:   mailcap noarch 2.1.49-3.amzn2023.0.3 amznlinux 33 k
[ 26.325830] cloud-init[2173]: installing weak dependencies:
[ 26.325830] cloud-init[2173]:   libaprutil1 x86_64 1.6.3-1.amzn2023.0.2 amznlinux 15 k
[ 26.336605] cloud-init[2173]:   mod-httdp x86_64 2.0.27-1.amzn2023.0.3 amznlinux 166 k
[ 26.347273] cloud-init[2173]:   mod_luw x86_64 2.4.65-1.amzn2023.0.2 amznlinux 60 k
[ 26.348353] cloud-init[2173]: Transaction Summary
[ 26.352000] cloud-init[2173]: Total download size: 2.4 M
[ 26.357622] cloud-init[2173]: Install 11 Packages
[ 26.363829] cloud-init[2173]: Total download size: 2.4 M
[ 26.363829] cloud-init[2173]: size: 6.9 M

```

- Instance screenshot showing console output - useful for troubleshooting inaccessible instances.

The screenshot shows the AWS Instance diagnostics Instance screenshot page for an EC2 instance. The terminal session output is as follows:

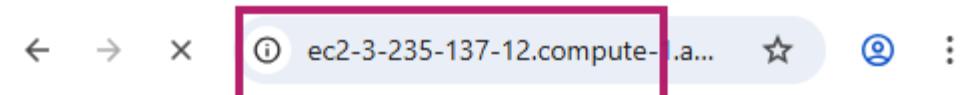
```

Amazon Linux 2023.9.20251208
Kernel 6.1.158-180.294.amzn2023.x86_64 on an x86_64 (-)

ip-10-0-1-7 login: [ 28.321515] zram_generator::config[2350]: zram0: system has too much memory (961MB), limit is 800MB, ignoring.
[ 29.758165] zram_generator::config[3647]: zram0: system has too much memory (961MB), limit is 800MB, ignoring.

```

- **Screenshot initial security group configuration with no HTTP access - demonstrates default deny policy.**



This site can't be reached

ec2-3-235-137-12.compute-1.amazonaws.com took
too long to respond.

Try:

- Checking the connection
- Checking the proxy and the firewall
- Running Windows Network Diagnostics

ERR_CONNECTION_TIMED_OUT

Reload

Details

- **Screenshot updated security group allowing HTTP traffic on port 80 from any IP address.**

Security group before modification - no HTTP access allowed

The screenshot shows the AWS EC2 Security Groups page. At the top, there are navigation icons for AWS, search, and notifications, followed by the account ID: 3598-8949-7250 and the user name: voclabs/user4457947=Abub... . Below the header, the breadcrumb navigation shows EC2 > Security Groups. The main title is "Security Groups (1/5) Info". There are three buttons: "Actions" with a dropdown arrow, "Export security groups to CSV" with a dropdown arrow, and "Create security group". A search bar with the placeholder "Find security groups by attribute or tag" is followed by a pagination indicator showing page 1 of 1. The table lists the following security groups:

Security group name	VPC ID	Description
default	vpc-0a06500a521c3d0b0 ↗	default
default	vpc-04e43607f4fa9b93a ↗	default
Web Server security group	vpc-0a06500a521c3d0b0 ↗	Security group for web servers
Ec2SecurityGroup	vpc-04e43607f4fa9b93a ↗	VPC Security Group
default	vpc-0613d88547cab8e9f ↗	default

Below the table, a specific security group is selected: "sg-041f062b050591f7c - Web Server security group". The "Inbound rules" tab is active, indicated by a blue underline. The "Inbound rules" section has a "Manage tags" button and an "Edit inbound rules" button. A search bar with the placeholder "Search" is present. The table headers for the inbound rules are: Name, Security group rule ID, and IP version. The message "No security group rules found" is displayed in a pink-bordered box.

Security group updated to allow HTTP traffic on port 80

aws | ⚙️ | 🔎 | 🗃 | 🔔 | ⓘ | ⚙️ | United St | Account ID: 3598-8949-7250 | voclabs/user4457947=Abubakr_Melouda

☰ EC2 > Security Groups

Security Groups (1/5) Info

C Actions ▾ Export security groups to CSV ▾ Create security group

Find security groups by attribute or tag

Security group name	VPC ID	Description
default	vpc-0a06500a521c3d0b0 ↗	default VPC securi
default	vpc-04e43607f4fa9b93a ↗	default VPC securi
Ec2SecurityGroup	vpc-04e43607f4fa9b93a ↗	VPC Security Grou
Web Server security group	vpc-0a06500a521c3d0b0 ↗	Security group for
default	vpc-0613d88547cab8e9f ↗	default VPC securi

sg-041f062b050591f7c - Web Server security group

< Details Inbound rules Outbound rules Sharing VPC associa >

Inbound rules (1)

Manage tags Edit inbound rules

Search

Type	Protocol	Port range	Source
HTTP	TCP	80	0.0.0.0/0

- Screenshot web server successfully delivering content after security group configuration - demonstrates practical firewall rules application.



- Screenshot EC2 instance in stopped state before resizing operations - no compute charges while stopped.

A screenshot of the AWS EC2 Instances page. The left sidebar shows the 'Instances' section with various options like Instances, Instance Types, Launch Templates, etc. The main pane shows a table of instances. One instance, named 'Web Server' with Instance ID i-0d698926e1dfc7315, is highlighted with a red box around its status column, which shows 'Stopped'. A green success message box at the top right says 'Successfully initiated stopping of i-0d698926e1dfc7315'. The table has columns for Name, Instance ID, and Instance state.

- Screenshot changing instance type from t2.micro to t2.small for vertical scaling.

Before

The screenshot shows the AWS EC2 Instances page. On the left, there's a sidebar with navigation links like Dashboard, EC2 Global View, Events, and Instances. Under Instances, there are sub-links for Instances, Instance Types, Launch Templates, Spot Requests, Savings Plans, Reserved Instances, Dedicated Hosts, and Capacity Reservations. The main content area is titled "Instances (1/2)" and shows two instances in a table:

Instance ID	Instance state	Instance type
i-026f1bceec7f8e35e	Running	t2.micro
i-0d698926e1dfc7315	Stopped	t2.micro

After

The screenshot shows the AWS EC2 Instances page after changes were made. A green success message at the top right says "Instance type changed successfully". The main content area is titled "Instances (1/2)" and shows the same two instances in a table, but the stopped instance's type has been updated:

Instance ID	Instance state	Instance type
i-026f1bceec7f8e35e	Running	t2.micro
i-0d698926e1dfc7315	Stopped	t2.small

- Screenshot activating stop protection feature to prevent accidental instance stoppage - demonstrates instance-level safeguards.**

Instances (1/2) Info

Last updated 4 minutes ago

Actions ▾ Launch instances

Find Instance by attribute or tag (case-insensitive)

All states ▾

Name	Instance ID	Instance state
Bastion Host	i-026f1bceec7f8e35e	Running
Web Server	i-0d698926e1dfc7315	Stopped

Change stop protection

Enable stop protection to prevent your instance from being accidentally stopped. [Learn more](#)

Instance ID: i-0d698926e1dfc7315 (Web Server)

Stop protection: Enable

Cancel Save

Test result showing instance successfully responding to no stop

Instances (1/2) Info

Last updated 2 minutes ago

Actions ▾

Find Instance by attribute or tag (case-insensitive)

Name	Instance ID	Instance state
Bastion Host	i-026f1bceec7f8e35e	Running
Web Server	i-0d698926e1dfc7315	Running

The screenshot shows the AWS EC2 Instances page. A red callout box highlights an error message: "Failed to stop the instance i-0d698926e1dfc7315. The instance 'i-0d698926e1dfc7315' may not be stopped. Modify its 'disableApiStop' instance attribute and try again." Below the message is a "Diagnose with Amazon Q" button. The main table lists two instances:

Name	Instance ID	Instance State
Bastion Host	i-026f1bceec7f8e35e	Running
Web Server	i-0d698926e1dfc7315	Running

- **Screenshot disabling stop protection to allow instance stoppage when needed.**

Instances (1/2) [Info](#)

Last updated 6 minutes ago [C](#) [Connect](#) [Instance state ▾](#)

[Actions ▾](#) [Launch instances](#) [▼](#)

Find Instance by attribute or tag (case-insensitive) [All states ▾](#)

Name ✎	Instance ID	Instance state
Bastion Host	i-026f1bceec7f8e35e	Running
Web Server	i-0d698926e1dfc7315	Stopped

Change stop protection [X](#)

Enable stop protection to prevent your instance from being accidentally stopped. [Learn more](#)

Instance ID [i-0d698926e1dfc7315 \(Web Server\)](#)

Stop protection [Enable](#)

[Cancel](#) [Save](#)

[Instance summary](#) [Info](#)

- Screenshot increasing EBS root volume from 8 GB to 10 GB for additional storage capacity.

aws | ⚡ | 🔎 | 📁 | 🔔 | ⓘ | ⚙️ | United St | Account ID: 3598-8949-7250 | vocabs/user4457947=Abubakr_Melouda

☰ EC2 > Volumes > vol-0655061d8ef62d10f > Modify volume

Modify volume Info

Modify the type, size, and performance of an EBS volume.

Volume details

Volume ID
vol-0655061d8ef62d10f

Volume type Info
General Purpose SSD (gp3)

Size (GiB) Info
10
Min: 1 GiB, Max: 65536 GiB.

IOPS Info
3000
Min: 3000 IOPS, Max: 80000 IOPS.

Throughput (MiB/s) Info
125
Min: 125 MiB, Max: 2000 MiB. Baseline: 125 MiB/s.

Cancel **Modify**

The screenshot shows the AWS Lambda service page. At the top, there's a banner indicating a "Requested volume modification for volume vol-0655061d8ef62d10f." Below this, a message says "The volume is being modified." The main section is titled "Volumes (1)" with an "Info" link. It shows a single volume entry:

Name	Volume ID	Type	Size	IOPS
	vol-0655061d8ef62d10f	gp3	10 GiB	3000

- Screenshot AWS Service Quotas showing EC2 instance limits per region - important for capacity planning.

The screenshot shows the AWS Service Quotas console for the Amazon Elastic Compute Cloud (Amazon EC2) service. On the left sidebar, there's a link to "AWS services" with an arrow pointing to it. The main content area displays the "Service quotas" table for the "running on-demand" quota:

Quota name	Applied account-level quota value	AWS default quota value	Utilization	Adjustability
Running On-Demand DL instances	96	0	0	Account level
Running On-Demand F instances	64	0	0	Account level
Running On-Demand G and GT instances	0	0	0	Account level
Running On-Demand High Memory instances	0	0	0	Account level
Running On-Demand HPC instances	192	0	0	Account level
Running On-Demand I instances	8	0	0	Account level
Running On-Demand P instances	0	0	0	Account level
Running On-Demand Standard (A, C, D, H, I, M, R, T, Z) instances	256	5	1	Account level
Running On-Demand Tm instances	8	0	0	Account level
Running On-Demand X instances	0	0	0	Account level

- Screenshot EC2 instance successfully stopped after all lab tasks completed - demonstrates full lifecycle management.

The screenshot shows the AWS EC2 Instances page. At the top, there's a success message: "Successfully initiated stopping of i-0d698926e1dfc7315". The main table lists two instances:

Name	Instance ID	Instance state
Bastion Host	i-026f1bceec7f8e35e	Running
Web Server	i-0d698926e1dfc7315	Stopped