



Pelatihan ABCD – Hari 5 Cloud Computing

Sekolah Teknik Elektro dan Informatika Institut Teknologi Bandung
Universitas Singaperbangsa Karawang

Introduction to Cloud 101

<https://www.awseducate.com/student/s/>

AWS Core Services Labs

The screenshot shows a web browser window with the URL awseducate.instructure.com/courses/746/pages/aws-core-services-labs?module_item_id=13160. The page title is "AWS Core Services Labs: Intro". The left sidebar has a dark theme with icons for Home, Account, Dashboard, Courses, History, and Help. The main content area has a light theme with the title "AWS Core Services Labs" and a sub-section "Lab 1 - Introduction to Amazon S3". It includes a brief description, a list of learning objectives, and another section "Lab 2 - Introduction to Amazon EC2" with its own description and a list of learning objectives.

aws

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AWS Core Services Labs

Build your Amazon Web Services skills with hands-on-labs.

Lab 1 - Introduction to Amazon S3

In this self-paced lab, you will practice using the basic feature functionality of Amazon S3 using the AWS Management Console. This lab requires approximately 60 minutes to complete.

After completing this lab, you will know how to:

- Create a bucket in Amazon S3
- Add an object to a bucket
- Manage access permissions on an object and a bucket
- Create a bucket policy
- Use bucket versioning

Lab 2 - Introduction to Amazon EC2

In this self-paced lab, you will practice using Amazon EC2. This lab provides you with a basic overview of launching, resizing, managing, and monitoring an Amazon EC2 instance. This lab requires approximately 60 minutes to complete.

By the end of this lab, you will be able to:

- Launch a web server with termination protection enabled
- Monitor your EC2 instance
- Modify the security group that your web server is using to allow HTTP access
- Resize your Amazon EC2 instance to scale
- Explore EC2 limits
- Test termination protection
- Terminate your EC2 instance

Lab 2: Introduction to Amazon EC2

https://awseducate.instructure.com/courses/746/assignments/3072?module_item_id=13185

Lab 2: Introduction to Amazon EC2

The screenshot shows a web browser window with the following details:

- Address Bar:** awseducate.instructure.com/courses/746/assignments/3072?module_item_id=13185
- Title Bar:** Lab 2 - Introduction to Amazon
- Page Content:**
 - Left Sidebar (Courses View):** AWS logo, Account, Modules, Dashboard, Courses, History, Help.
 - Header:** EDC101v1EN > Assignments > Lab 2 - Introduction to Amazon EC2
 - Section Headers:** Lab 2 - Introduction to Amazon EC2, Lab overview and objectives.
 - Text:** This lab provides you with a basic overview of launching, resizing, managing, and monitoring an Amazon Elastic Compute Cloud (Amazon EC2) instance.
Amazon EC2 is a web service that provides resizable compute capacity in the cloud. It is designed to make web-scale cloud computing simple and intuitive to use.
With the web service interface of Amazon EC2, you can
 - Toolbox:** Submit, Details, AWS, Start Lab, End Lab, Instructions, Grades, Actions.
 - Terminal Mockup:** Shows a terminal window titled 'bash' with the command 'ddd_v1_w_1Vu_1834270@runweb67415:~\$'.
- Bottom Navigation:** Previous, Next.

-
- ▶ After completing this lab, you will know how to:
 - ▶ Launch a web server with termination protection enabled
 - ▶ Monitor Your EC2 instance
 - ▶ Modify the security group that your web server is using to allow HTTP access
 - ▶ Resize your EC2 instance to scale
 - ▶ Explore Amazon EC2 limits
 - ▶ Test termination protection
 - ▶ Terminate your EC2 instance
 - ▶ Duration
 - ▶ This lab requires approximately 45 minutes to complete. You will have a total time of 180 minutes to complete this lab.

Accessing the AWS Management Console

Home x Lab 2 - Introduction to Amazon EC2 +

awseducate.instructure.com/courses/746/assignments/3072?module_item_id=13185

Getting Started Imported From Fir... Addons New Tab Network Research... IEEE/ACM Internat... Styles Archives -...

aws EDC101v1EN > Assignments > Lab 2 - Introduction to Amazon EC2

Lab 2 - Introduction to Amazon EC2

Due No Due Date Points 100 Submitting an external tool

Start Lab

Region: us-east-1
Lab ID: arn:aws:cloudformation:us-east-1:330777538072:stack/c35460a46649113240325t1w330777538072/75696500-743a-11ed-a28d-0e9eac0d0f09
Creation Time: 2022-12-04T17:16:34-0800
Refresh session at: 2022-12-04T17:16:41-0800
Remaining session time: 00:45:00(45 minutes)
Lab status: ready

With the web service interface of Amazon EC2, you can

◀ Previous Next ▶

Choose AWS to open AWS Management Console

The screenshot shows a web browser window with the following details:

- Title Bar:** Lab 2 - Introduction to Amazon EC2
- Address Bar:** awseducate.instructure.com/courses/746/assignments/3072?module_item_id=13185
- Left Sidebar (Courses):** Contains icons for AWS, Account, Modules, Dashboard, Courses, History, Help, and a back arrow.
- Header:** AWS logo, Course navigation (EDC101v1EN > Assignments), Assignment title (Lab 2 - Introduction to Amazon EC2), Due Date (No Due Date), Points (100), and Submission status (Submitting an external tool).
- Content Area:**
 - Submit, Details, AWS, Start Lab, End Lab, 0:44, Instructions, Grades, Actions** buttons.
 - File Selection:** Files (unchecked), README (checked), Terminal (checked), Source (unchecked).
 - Terminal Output:** bash
ddd_v1_w_lvu_1834270@runweb67415:~\$
ddd_v1_w_lvu_1834270@runweb67415:~\$
ddd_v1_w_lvu_1834270@runweb67415:~\$
 - Instructions:**
 - At the top of these instructions, choose **Start Lab** to launch your lab.
A **Start Lab** panel opens, and it displays the lab status.
 - Tip: If you need more time to complete the lab, choose the **Start Lab** button again to restart the timer for the environment.
 - Wait until you see the message *Lab status: ready*, then close the **Start Lab** panel by choosing the X.
 - At the top of these instructions, choose **AWS**.
- Bottom Navigation:** Previous (left arrow) and Next (right arrow) buttons.



Task 1: Launching your EC2 instance

In the AWS Management Console on the Services menu, choose EC2

The screenshot shows the AWS Management Console with the EC2 Management service selected. The left sidebar shows navigation options like New EC2 Experience, EC2 Dashboard, Instances, Images, and Elastic Block Store. The main content area displays the EC2 Global view with various resource counts: Instances (running) 0, Dedicated Hosts 0, Elastic IPs 0, Instances 0, Key pairs 1, Load balancers 0 (with an API Error), Placement groups 0, Security groups 2, and Snapshots 0. It also features a launch instance button and a service health section indicating normal operation. The right sidebar contains account attributes such as Supported platforms (VPC), Default VPC (vpc-0eb4ca1635de42fe6), and explore AWS sections for price performance and spot instances.

Resources

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

Instances (running)	0	Dedicated Hosts	0	Elastic IPs	0
Instances	0	Key pairs	1	Load balancers	0 API Error
Placement groups	0	Security groups	2	Snapshots	0
Volumes	0				

Easily size, configure, and deploy Microsoft SQL Server Always On availability groups on AWS using the AWS Launch Wizard for SQL Server. [Learn more](#)

Launch instance

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

Service health

AWS Health Dashboard

Region
US East (N. Virginia)

Status
This service is operating normally

Zones

Explore AWS

Get Up to 40% Better Price Performance
T4g instances deliver the best price performance for burstable general purpose workloads in Amazon EC2. [Learn more](#)

Save up to 90% on EC2 with Spot Instances
Optimize price-performance by combining EC2 purchase options in a single EC2 ASG. [Learn more](#)

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Step 1: Name your EC2 instance

The screenshot shows the AWS Management Console interface for launching an EC2 instance. The browser tab is titled "Launch an instance | EC2 Manager". The URL is "us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#LaunchInstances:". The AWS logo is in the top left, followed by "Services" and a search bar. The region is set to "N. Virginia". The user is signed in as "voclabs/user2296696=Yoanes_Bandung @ 3307-7753-8072". The navigation path is "EC2 > Instances > Launch an instance".

Name and tags Info

Name: Add additional tags

Application and OS Images (Amazon Machine Image) Info

An AMI is a template that contains the software configuration (operating system, application server, and applications) required to launch your instance. Search or Browse for AMIs if you don't see what you are looking for below.

Search our full catalog including 1000s of application and OS images

Quick Start

Amazon Linux aws macOS Ubuntu Windows Red Hat S >

Browse more AMIs
Including AMIs from AWS Marketplace and

Summary

Number of instances Info

Software Image (AMI)
Amazon Linux 2 Kernel 5.10 AMI... read more
ami-0b0dc5b0567f052a63

Virtual server type (instance type)
t2.micro

Firewall (security group)
New security group

Storage (volumes)
1 volume(s) - 8 GiB

i Free tier: In your first year includes 750 hours of t2.micro (or t3.micro in the Regions in which t2.micro is unavailable) instance usage on free tier AMIs per month, 30 GiB of EBS storage, 2 million I/Os, 1 GB of snapshots, and 100 GB of bandwidth to the internet.

Cancel **Launch instance**

Feedback Looking for language selection? Find it in the new Unified Settings ?

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Home | Lab 2 - Introduction to Amazon | Launch an instance | EC2 Manager | +

us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#LaunchInstances:

Getting Started Imported From Fir... Addons New Tab Network Research... IEEE/ACM Internat... Styles Archives -...

aws Services Search [Option+S] N. Virginia v vocabs/user2296696=Yoanes_Bandung @ 3307-7753-8072 ▾

EC2 > Instances > Launch an instance

Launch an instance Info

Amazon EC2 allows you to create virtual machines, or instances, that run on the AWS Cloud. Quickly get started by following the simple steps below.

Name and tags Info

Key Info Value Info Resource types Info

Name Web-Server Select resource type... Instances Volumes

Add tag

49 remaining (Up to 50 tags maximum)

Application and OS Images (Amazon Machine Image) Info

An AMI is a template that contains the software configuration (operating system, application server, and applications) required to launch your instance. Search or Browse for AMIs if you don't see what you are looking for below

Search our full catalog including 1000s of application and OS images

Summary

Number of instances Info
1

Software Image (AMI)
Amazon Linux 2 Kernel 5.10 AMI... read more
ami-0b0dc5b0567f052a63

Virtual server type (instance type)
t2.micro

Firewall (security group)
New security group

Storage (volumes)
1 volume(s) - 8 GiB

i **Free tier:** In your first year includes 750 hours of t2.micro (or t3.micro in the Regions in which t2.micro is unavailable) instance usage on free tier AMIs per month, 30 GiB of EBS storage, 2 million I/Os, 1 GB of snapshots, and 100 GB of bandwidth to the internet.

Cancel **Launch instance**

Feedback Looking for language selection? Find it in the new Unified Settings ?

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Step 2: Choose an Amazon Machine Image (AMI)

The screenshot shows the AWS Management Console interface for launching an instance. The top navigation bar includes tabs for Home, Lab 2 - Introduction to Amazon, and Launch an instance | EC2 Manager. The main search bar has the placeholder [Option+S]. The top right shows the region as N. Virginia and the user's session information.

In the left sidebar, there are filters for Instances (selected) and Volumes.

The main content area is titled "Application and OS Images (Amazon Machine Image)" with a "Summary" section on the right.

Summary

- Number of instances: 1
- Software Image (AMI): Amazon Linux 2 Kernel 5.10 AMI... [read more](#)
ami-0b0dcdb5067f052a63
- Virtual server type (instance type): t2.micro
- Firewall (security group): New security group
- Storage (volumes): 1 volume(s) - 8 GiB

A callout box highlights the "Free tier" information:

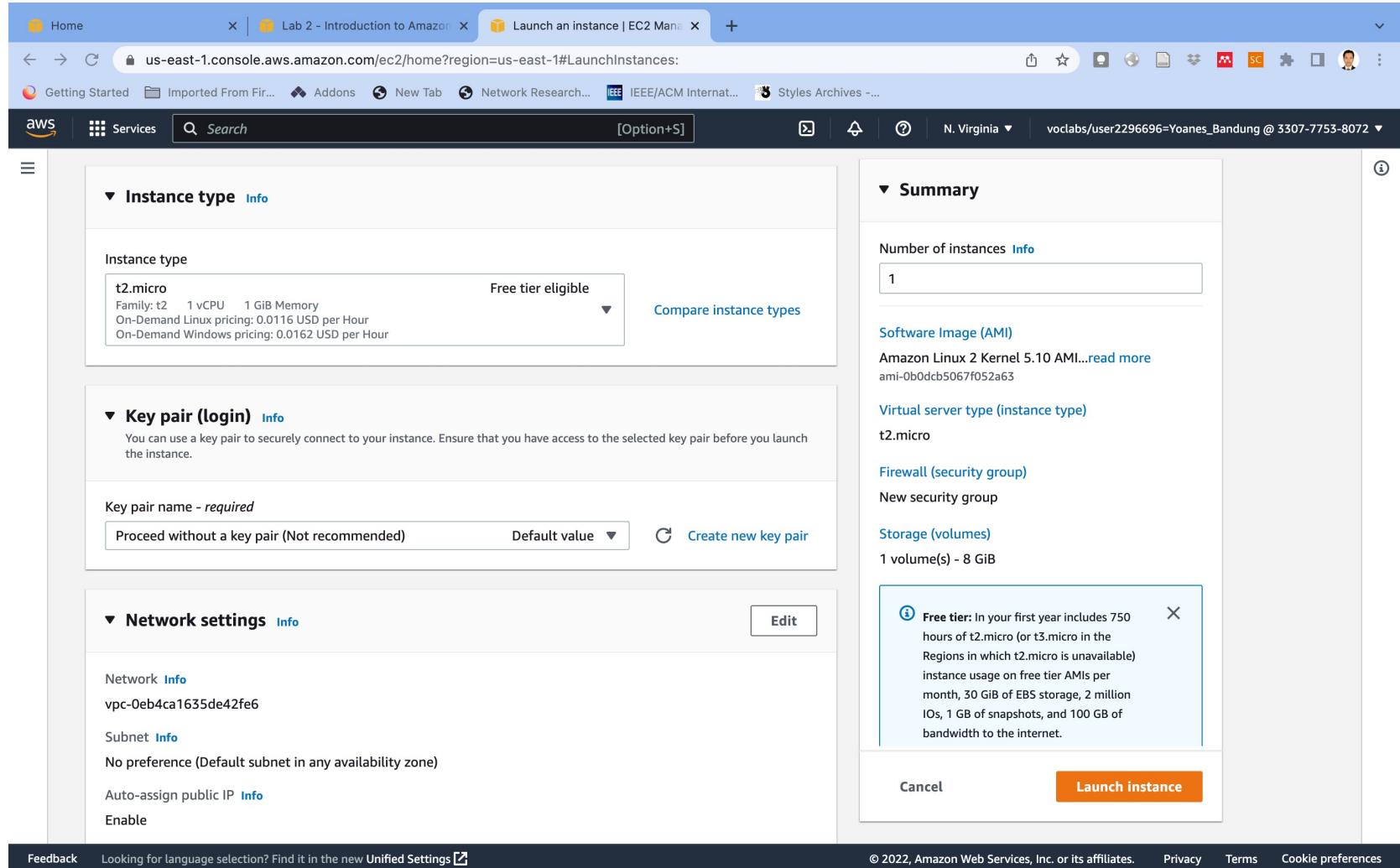
Free tier: In your first year includes 750 hours of t2.micro (or t3.micro in the Regions in which t2.micro is unavailable) instance usage on free tier AMIs per month, 30 GiB of EBS storage, 2 million I/Os, 1 GB of snapshots, and 100 GB of bandwidth to the internet.

At the bottom right of the summary section are "Cancel" and "Launch instance" buttons.

The left panel also shows a "Quick Start" section with links to various AMIs: Amazon Linux, macOS, Ubuntu, Windows, Red Hat, and a "Browse more AMIs" link.

At the bottom, there are links for Feedback, Language selection, and legal notices: © 2022, Amazon Web Services, Inc. or its affiliates., Privacy, Terms, and Cookie preferences.

Step 3: Choose an instance type, Step 4: Configure a key pair



The screenshot shows the AWS EC2 Launch an instance wizard. The top navigation bar includes tabs for Home, Lab 2 – Introduction to Amazon, and Launch an instance | EC2 Manager. The main content area is divided into two columns.

Left Column (Step 3: Instance type):

- Instance type:** t2.micro (Free tier eligible).
 - Family: t2
 - 1 vCPU
 - 1 GiB Memory
 - On-Demand Linux pricing: 0.0116 USD per Hour
 - On-Demand Windows pricing: 0.0162 USD per Hour
- Key pair (login):** A note says you can use a key pair to securely connect to your instance. It includes a dropdown for "Key pair name - required" (set to "Proceed without a key pair (Not recommended)" with a "Default value" button), a "Create new key pair" button, and a "Compare instance types" link.
- Network settings:** Includes "Network" (vpc-0eb4ca1635de42fe6), "Subnet" (No preference, Default subnet in any availability zone), and "Auto-assign public IP" (Enable).

Right Column (Step 4: Summary):

- Summary:** Number of instances: 1.
- Software Image (AMI):** Amazon Linux 2 Kernel 5.10 AMI... (read more, ami-0b0dcb5067f052a63)
- Virtual server type (instance type):** t2.micro
- Firewall (security group):** New security group
- Storage (volumes):** 1 volume(s) - 8 GiB
- Free tier:** In your first year includes 750 hours of t2.micro (or t3.micro in the Regions in which t2.micro is unavailable) instance usage on free tier AMIs per month, 30 GiB of EBS storage, 2 million I/Os, 1 GB of snapshots, and 100 GB of bandwidth to the internet.
- Buttons:** Cancel (grayed out) and Launch instance (orange button).

At the bottom, there are links for Feedback, Language selection, Copyright (© 2022, Amazon Web Services, Inc. or its affiliates.), Privacy, Terms, and Cookie preferences.

Step 5: Configure the network settings

The screenshot shows the AWS Launch Wizard interface for launching an instance. The left panel is titled 'Network settings' and contains the following configuration:

- Network**: vpc-0eb4ca1635de42fe6
- Subnet**: No preference (Default subnet in any availability zone)
- Auto-assign public IP**: Enabled
- Firewall (security groups)**: A note states: "A security group is a set of firewall rules that control the traffic for your instance. Add rules to allow specific traffic to reach your instance." Below this are two buttons:
 - Create security group
 - Select existing security group
- Rules**:
 - Allow SSH traffic from Anywhere (0.0.0.0/0)
 - Allow HTTPS traffic from the internet (To set up an endpoint, for example when creating a web server)
 - Allow HTTP traffic from the internet (To set up an endpoint, for example when creating a web server)
- Warning**: "⚠️ Rules with source of 0.0.0.0/0 allow all IP addresses to access your instance. We recommend setting security group rules to allow access from known IP addresses only."

The right panel is titled 'Summary' and displays the following details:

- Number of instances**: 1
- Software Image (AMI)**: Amazon Linux 2 Kernel 5.10 AMI... (ami-0b0dc5067f052a63)
- Virtual server type (instance type)**: t2.micro
- Firewall (security group)**: New security group
- Storage (volumes)**: 1 volume(s) - 8 GiB
- Free tier**: In your first year includes 750 hours of t2.micro (or t3.micro in the Regions in which t2.micro is unavailable) instance usage on free tier AMIs per month, 30 GiB of EBS storage, 2 million I/Os, 1 GB of snapshots, and 100 GB of bandwidth to the internet.
- Buttons**: Cancel and Launch instance

At the bottom, there are links for Feedback, Language selection, Copyright (© 2022, Amazon Web Services, Inc. or its affiliates.), Privacy, Terms, and Cookie preferences.

From the VPC - required dropdown list, choose Lab VPC

The screenshot shows the 'Launch an instance | EC2 Manager' wizard on the AWS Management Console. The current step is 'Network settings'. Key configuration options include:

- VPC - required**: A dropdown menu is open, showing 'vpc-0b6473da8f1b86a9f (Lab VPC)' selected. Other options like '10.0.0.0/16' are also visible.
- Subnet Info**: Shows 'subnet-06d592a8b44f6e7cc' assigned to 'Public Subnet 1'. Details: VPC: vpc-0b6473da8f1b86a9f, Owner: 330777538072, Availability Zone: us-east-1a, IP addresses available: 251, CIDR: 10.0.1.0/24.
- Auto-assign public IP**: Set to 'Enable'.
- Firewall (security groups)**: A note says 'A security group is a set of firewall rules that control the traffic for your instance. Add rules to allow specific traffic to reach your instance.' Two buttons are present: 'Create security group' (selected) and 'Select existing security group'.
- Security group name - required**: The input field contains 'launch-wizard-1'.
- Description - required**: The input field contains 'launch-wizard-1 created 2022-12-05T01:19:56.843Z'.
- Inbound security groups rules**: This section is currently empty.

Summary panel on the right displays the following details:

- Number of instances**: 1
- Software Image (AMI)**: Amazon Linux 2 Kernel 5.10 AMI... [read more](#)
- Virtual server type (instance type)**: t2.micro
- Firewall (security group)**: New security group
- Storage (volumes)**: 1 volume(s) - 8 GiB
- Free tier**: In your first year includes 750 hours of t2.micro (or t3.micro in the Regions in which t2.micro is unavailable) instance usage on free tier AMIs per month, 30 GiB of EBS storage, 2 million I/Os, 1 GB of snapshots, and 100 GB of bandwidth to the internet.

At the bottom right are 'Cancel' and 'Launch instance' buttons. The 'Launch instance' button is highlighted in orange.

Page footer:

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- Terms
- Cookie preferences

For Security group name - required, enter Web Server security group

The screenshot shows the AWS EC2 'Launch an instance' wizard in progress. The current step is 'Network settings'. Key configuration includes:

- VPC - required**: Set to 'vpc-0b6473da8f1b86a9f (Lab VPC) 10.0.0.0/16'.
- Subnet**: Set to 'subnet-06d592a8b44f6e7cc' (Public Subnet 1). Details: VPC: vpc-0b6473da8f1b86a9f, Owner: 330777538072, Availability Zone: us-east-1a, IP addresses available: 251, CIDR: 10.0.1.0/24.
- Auto-assign public IP**: Set to 'Enable'.
- Firewall (security groups)**: Set to 'Create security group'. A note states: 'A security group is a set of firewall rules that control the traffic for your instance. Add rules to allow specific traffic to reach your instance.'
- Security group name - required**: Set to 'Web Server security group'. A note states: 'This security group will be added to all network interfaces. The name can't be edited after the security group is created. Max length is 255 characters. Valid characters: a-z, A-Z, 0-9, spaces, and _-:/()#@[]+=;&;!\$*'
- Description - required**: Set to 'launch-wizard-1 created 2022-12-05T01:19:56.843Z'.

Summary section on the right displays:

- Number of instances**: 1
- Software Image (AMI)**: Amazon Linux 2 Kernel 5.10 AMI... [read more](#) ami-0b0dc5067f052a63
- Virtual server type (instance type)**: t2.micro
- Firewall (security group)**: New security group
- Storage (volumes)**: 1 volume(s) - 8 GiB
- Free tier**: In your first year includes 750 hours of t2.micro (or t3.micro in the Regions in which t2.micro is unavailable) instance usage on free tier AMIs per month, 30 GiB of EBS storage, 2 million I/Os, 1 GB of snapshots, and 100 GB of bandwidth to the internet.

At the bottom right are 'Cancel' and 'Launch instance' buttons.

Page footer: Feedback, Looking for language selection? Find it in the new Unified Settings, © 2022, Amazon Web Services, Inc. or its affiliates., Privacy, Terms, Cookie preferences.

To delete the existing SSH rule, next to Security group rule 1, choose Remove

Description - required [Info](#)
launch-wizard-1 created 2022-12-05T01:19:56.843Z

Inbound security groups rules

▼ Security group rule 1 (TCP, 22, 0.0.0.0/0) [Remove](#)

Type Info	Protocol Info	Port range Info
ssh	TCP	22

Source type Info	Source Info	Description - optional Info
Anywhere	<input type="text"/> Add CIDR, prefix list or security group 0.0.0.0/0 X	e.g. SSH for admin desktop

⚠ Rules with source of 0.0.0.0/0 allow all IP addresses to access your instance. We recommend setting security group rules to allow access from known IP addresses only. [X](#)

Add security group rule

► Advanced network configuration

▼ Configure storage [Info](#) [Advanced](#)

1x 8 GiB gp2 [▼](#) Root volume (Not encrypted)

Number of instances [Info](#)
1

Software Image (AMI)
Amazon Linux 2 Kernel 5.10 AMI... [read more](#)
ami-0b0dcb5067f052a63

Virtual server type (instance type)
t2.micro

Firewall (security group)
New security group

Storage (volumes)
1 volume(s) - 8 GiB

ⓘ Free tier: In your first year includes 750 hours of t2.micro (or t3.micro in the Regions in which t2.micro is unavailable) instance usage on free tier AMIs per month, 30 GiB of EBS storage, 2 million I/Os, 1 GB of snapshots, and 100 GB of bandwidth to the internet. [X](#)

[Cancel](#) [Launch instance](#)

Feedback Looking for language selection? Find it in the new Unified Settings [▼](#)

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Step 6: Add storage

The screenshot shows the AWS EC2 Launch Wizard interface. The top navigation bar includes tabs for Home, Lab 2 – Introduction to Amazon, and Launch an instance | EC2 Manager. The main content area is titled "Launch an instance | EC2 Manager". The URL in the address bar is us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#LaunchInstances:. The sidebar on the left lists "Services" and has a search bar. The top right shows the user "N. Virginia" and the session ID "voclabs/user2296696=Yoanes_Bandung @ 3307-7753-8072".

Description - required [Info](#)
launch-wizard-1 created 2022-12-05T01:19:56.843Z

Inbound security groups rules
No security group rules are currently included in this template. Add a new rule to include it in the launch template.

[Add security group rule](#)

[► Advanced network configuration](#)

Configure storage [Info](#) [Advanced](#)

1x 8 GiB gp2 Root volume (Not encrypted)

[ⓘ Free tier eligible customers can get up to 30 GB of EBS General Purpose \(SSD\) or Magnetic storage](#) [X](#)

[Add new volume](#)

0 x File systems [Edit](#)

[► Advanced details](#) [Info](#)

Summary

Number of instances [Info](#)
1

Software Image (AMI)
Amazon Linux 2 Kernel 5.10 AMI... [read more](#)
ami-0b0dc5067f052a63

Virtual server type (instance type)
t2.micro

Firewall (security group)
New security group

Storage (volumes)
1 volume(s) - 8 GiB

[ⓘ Free tier: In your first year includes 750 hours of t2.micro \(or t3.micro in the Regions in which t2.micro is unavailable\) instance usage on free tier AMIs per month, 30 GiB of EBS storage, 2 million I/Os, 1 GB of snapshots, and 100 GB of bandwidth to the internet.](#) [X](#)

[Cancel](#) [Launch instance](#)

Feedback Looking for language selection? Find it in the new Unified Settings [Z](#)

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Step 7: Configure advanced details

The screenshot shows the AWS EC2 Launch Instance wizard at Step 7: Configure advanced details. The left panel contains fields for purchasing options, domain join, IAM instance profiles, hostnames, DNS settings, and instance auto-recovery. The right panel displays a summary of the configuration, including the number of instances (1), software image (Amazon Linux 2 Kernel 5.10 AMI), virtual server type (t2.micro), and a note about the free tier. At the bottom right is a 'Launch instance' button.

Purchasing option [Info](#)
 Request Spot Instances
Request Spot Instances at the Spot price, capped at the On-Demand price

Domain join directory [Info](#)
Select [Create new directory](#)

IAM instance profile [Info](#)
Select [Create new IAM profile](#)

Hostname type [Info](#)
IP name

DNS Hostname [Info](#)
 Enable IP name IPv4 (A record) DNS requests
 Enable resource-based IPv4 (A record) DNS requests
 Enable resource-based IPv6 (AAAA record) DNS requests

Instance auto-recovery [Info](#)
Select

Shutdown behavior [Info](#)
Stop

Stop - Hibernate behavior [Info](#)

Summary

Number of instances [Info](#)
1

Software Image (AMI)
Amazon Linux 2 Kernel 5.10 AMI... [read more](#)
ami-0b0dcb5067f052a63

Virtual server type (instance type)
t2.micro

Firewall (security group)
New security group

Storage (volumes)
1 volume(s) - 8 GiB

Free tier: In your first year includes 750 hours of t2.micro (or t3.micro in the Regions in which t2.micro is unavailable) instance usage on free tier AMIs per month, 30 GiB of EBS storage, 2 million I/Os, 1 GB of snapshots, and 100 GB of bandwidth to the internet.

[Cancel](#) [Launch instance](#)

[Feedback](#) Looking for language selection? Find it in the new Unified Settings [?](#)

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From the Termination protection dropdown list, choose Enable

The screenshot shows the 'Launch an instance | EC2 Manager' wizard on the AWS Management Console. The left sidebar lists various configuration options: Shutdown behavior (Stop), Stop - Hibernate behavior (Select), Termination protection (Enable), Stop protection (Select), Detailed CloudWatch monitoring (Select), Elastic GPU (Select), Elastic inference (checkbox 'Add Elastic Inference accelerators' is unchecked), Credit specification (Select), and Placement group (Select). The right panel displays the 'Summary' section, which includes the number of instances (1), the software image (Amazon Linux 2 Kernel 5.10 AMI...), the virtual server type (t2.micro), the firewall (New security group), storage (1 volume(s) - 8 GiB), and a free tier information box. At the bottom right are 'Cancel' and 'Launch instance' buttons.

Shutdown behavior [Info](#)
Stop

Stop - Hibernate behavior [Info](#)
Select

Termination protection [Info](#)
Enable

Stop protection [Info](#)
Select

Detailed CloudWatch monitoring [Info](#)
Select

Elastic GPU [Info](#)
Select

Elastic inference [Info](#)
 Add Elastic Inference accelerators

Credit specification [Info](#)
Select

Placement group [Info](#)
Select

Create new placement group [\[+\]](#)

Summary

Number of instances [Info](#)
1

Software Image (AMI)
Amazon Linux 2 Kernel 5.10 AMI...[read more](#)
ami-0b0dcbb5067f052a63

Virtual server type (instance type)
t2.micro

Firewall (security group)
New security group

Storage (volumes)
1 volume(s) - 8 GiB

Free tier: In your first year includes 750 hours of t2.micro (or t3.micro in the Regions in which t2.micro is unavailable) instance usage on free tier AMIs per month, 30 GiB of EBS storage, 2 million I/Os, 1 GB of snapshots, and 100 GB of bandwidth to the internet.

Cancel Launch instance

Feedback Looking for language selection? Find it in the new Unified Settings [\[+\]](#)

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Write commands on the User data text box

The screenshot shows the AWS Lambda console with three tabs open: "Home", "Lab 2 - Introduction to Amazon", and "Launch an instance | EC2 Mana...". The main content area displays the "Launch an instance" wizard.

Metadata accessible: A dropdown menu set to "Select".

Metadata version: A dropdown menu set to "Select".

Metadata response hop limit: A dropdown menu set to "Select".

Allow tags in metadata: A dropdown menu set to "Select".

User data: A code editor containing the following shell script:

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

User data has already been base64 encoded

Summary

Number of instances: 1

Software Image (AMI): Amazon Linux 2 Kernel 5.10 AMI... [read more](#)
ami-0b0dc5067f052a63

Virtual server type (instance type): t2.micro

Firewall (security group): New security group

Storage (volumes): 1 volume(s) - 8 GiB

Free tier: In your first year includes 750 hours of t2.micro (or t3.micro in the Regions in which t2.micro is unavailable) instance usage on free tier AMIs per month, 30 GiB of EBS storage, 2 million I/Os, 1 GB of snapshots, and 100 GB of bandwidth to the internet.

Launch instance

Step 8: Launch an EC2 instance

The screenshot shows the AWS Lambda console with a tab titled "Lab 2 - Introduction to Amazon" and the current tab being "Launch an instance | EC2 Manager". The URL is "us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#LaunchInstances:". The AWS logo is at the top left, followed by "Services" and a search bar. The region is set to "N. Virginia". The user is signed in as "voclabs/user2296696=Yoanes_Bandung @ 3307-7753-8072".

The main form is titled "Launch an instance". It includes fields for:

- Metadata version: Select
- Metadata response hop limit: Select
- Allow tags in metadata: Select
- User data (highlighted with a blue border):

```
#!/bin/bash
yum -y install httpd
systemctl enable httpd
systemctl start httpd
echo '<html><h1>Hello From Your Web Server!</h1></html>' >
/var/www/html/index.html
```
- A checkbox: "User data has already been base64 encoded"

The "Summary" section on the right shows:

- Number of instances: 1
- Amazon Linux 2 Kernel 5.10 AMI... (read more, ami-0b0dc5067f052a63)
- Virtual server type (instance type): t2.micro
- Firewall (security group): New security group
- Storage (volumes): 1 volume(s) - 8 GiB

A callout box provides information about the Free tier:

Free tier: In your first year includes 750 hours of t2.micro (or t3.micro in the Regions in which t2.micro is unavailable) instance usage on free tier AMIs per month, 30 GiB of EBS storage, 2 million I/Os, 1 GB of snapshots, and 100 GB of bandwidth to the internet.

At the bottom are "Cancel" and "Launch instance" buttons.

Lab 2 - Introduction to Amazon X Launch an instance | EC2 Manager X +

us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#LaunchInstances:

Getting Started Imported From Fir... Addons New Tab Network Research... IEEE/ACM Internat... Styles Archives -...

aws Services Search [Option+S] N. Virginia ▾ voclabs/user2296696=Yoanes_Bandung @ 3307-7753-8072 ▾

EC2 > Instances > Launch an instance

Launching instance

Please wait while we launch your instance.

Do not close your browser while this is loading.

C Launch initiation 69%

▶ Details

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The screenshot shows a browser window with three tabs: "Home", "Lab 2 - Introduction to Amazon", and "Launch an instance | EC2 Manag...". The main content area is titled "Launch an instance" and shows a green success message: "Successfully initiated launch of instance (i-02f0f924d33a31976)". Below this, there is a link to "Launch log".

Success
Successfully initiated launch of instance (i-02f0f924d33a31976)
▶ Launch log

Next Steps - preview

Search for next steps including taking action on the launched instances

The next steps search functionality only searches on a subset of possible steps. You can potentially find other matches for your search by using the search at the top of the page or by browsing the console

Create billing and free tier usage alerts
To manage costs and avoid surprise bills, set up email notifications for billing and free tier usage thresholds.
[Create billing alerts](#)

Connect to your instance
Once your instance is running, log into it from your local computer.
[Connect to instance](#) [Learn more](#)

Connect an RDS database [New](#)
Configure the connection between an EC2 instance and a database to allow traffic flow between them.
[Connect an RDS database](#) [Create a new RDS database](#) [Learn more](#)

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Choose View all instances

The screenshot shows the AWS EC2 Launch Instances page. At the top, there are two tabs: "Lab 2 - Introduction to Amazon" and "Launch an instance | EC2 Manag...". The main content area has a header "Successfully initiated launch of instance i-0c3637251017659bc" and a "Launch log" button.

Next Steps - preview

Search for next steps including taking action on the launched instances

The next steps search functionality only searches on a subset of possible steps. You can potentially find other matches for your search by using the search at the top of the page or by browsing the console

Create billing and free tier usage alerts
To manage costs and avoid surprise bills, set up email notifications for billing and free tier usage thresholds.
[Create billing alerts](#)

Connect to your instance
Once your instance is running, log into it from your local computer.
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Connect an RDS database New
Configure the connection between an EC2 instance and a database to allow traffic flow between them.
[Connect an RDS database](#) [Create a new RDS database](#) [Learn more](#)

[View all instances](#)

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The instance is Running, which indicates that the instance has started booting

The screenshot shows the AWS EC2 Management console interface. The left sidebar is collapsed, showing the following navigation structure:

- New EC2 Experience (selected)
- EC2 Dashboard
- EC2 Global View
- Events
- Tags
- Limits
- Instances
 - Instances (New) (selected)
 - Instance Types
 - Launch Templates
 - Spot Requests
 - Savings Plans
 - Reserved Instances (New)
 - Dedicated Hosts
 - Scheduled Instances
 - Capacity Reservations
- Images
 - AMIs
 - AMI Catalog
- Elastic Block Store
 - Volumes

The main content area displays the "Instances (1) Info" table with the following data:

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Publ
Web-Server	i-02f0f924d33a31976	Running	t2.micro	Initializing	No alarms	us-east-1a	ec2-

Below the table, a modal window titled "Select an instance" is open, indicating that an instance has been selected for further action.

At the bottom of the page, there are footer links: Feedback, Looking for language selection? Find it in the new Unified Settings, © 2022, Amazon Web Services, Inc. or its affiliates., Privacy, Terms, and Cookie preferences.

Home | Lab 2 - Introduction to Amazon | Instances | EC2 Management

us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#Instances:

Getting Started Imported From Fir... Addons New Tab Network Research... IEEE/ACM Internat... Styles Archives -...

AWS Services Search [Option+S]

New EC2 Experience Tell us what you think

EC2 Dashboard EC2 Global View Events Tags Limits

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

Images AMIs AMI Catalog

Elastic Block Store Volumes

Instances (1/1) Info

Find instance by attribute or tag (case-sensitive)

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Publ
Web-Server	i-02f0f924d33a31976	Running	t2.micro	Initializing	No alarms	us-east-1a	ec2-

Launch instances

Instance: i-02f0f924d33a31976 (Web-Server)

Instance summary

Instance ID i-02f0f924d33a31976 (Web-Server)	Public IPv4 address 44.205.11.121 open address	Private IPv4 addresses 10.0.1.193
IPv6 address -	Instance state Running	Public IPv4 DNS ec2-44-205-11-121.compute-1.amazonaws.com open address
Hostname type IP name: ip-10-0-1-193.ec2.internal	Private IP DNS name (IPv4 only) ip-10-0-1-193.ec2.internal	Elastic IP addresses -
Answer private resource DNS name IPv4 (A)	Instance type t2.micro	AWS Compute Optimizer finding Opt-in to AWS Compute Optimizer for recommendation s.
Auto-assigned IP address 44.205.11.121 [Public IP]	VPC ID vpc-0b6473da8f1b86a9f (Lab VPC)	Learn more

Feedback Looking for language selection? Find it in the new Unified Settings

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Details of the instance

The screenshot shows the AWS EC2 Management console interface. The main view displays a single instance named "Web-Server" (i-0c5057254817697bd) which is currently "Running". The instance is of type "t2.micro" and is located in the "us-east-1a" availability zone. The "Status check" is "Initializing" and there are "No alarms". The "Instance state" is "Running".

The left sidebar shows the navigation menu with the following sections and sub-items:

- New EC2 Experience (selected)
- EC2 Dashboard
- EC2 Global View
- Events
- Tags
- Limits
- Instances
 - Instances (selected)
 - Instance Types
 - Launch Templates
 - Spot Requests
 - Savings Plans
 - Reserved Instances (New)
 - Dedicated Hosts
 - Scheduled Instances
 - Capacity Reservations
- Images
 - AMIs
 - AMI Catalog
- Elastic Block Store
 - Volumes

At the bottom of the page, there are links for Feedback, Language selection, Copyright notice (© 2022, Amazon Web Services, Inc. or its affiliates.), Privacy, Terms, and Cookie preferences.

Security of the instance

The screenshot shows the AWS EC2 Management console with the URL us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#Instances. The main view displays a single instance named "Web-Server" with ID i-0c5057254817697bd, which is running and has an instance type of t2.micro. The "Security" tab is selected under the instance details. The security details section shows the IAM Role (empty), Owner ID (330777538072), and Launch time (Thu Dec 08 2022 07:46:37 GMT+0700 (Western Indonesia Time)). It also lists the security group sg-057adca8c9341e156 (Web Server security group). The inbound rules section is currently empty, showing a table header and the message "No rules to display".

Lab 2 - Introduction to Amazon X Instances | EC2 Management X +

us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#Instances:

Getting Started Imported From Fir... Addons New Tab Network Research... IEEE/ACM Internat... Styles Archives -...

New EC2 Experience Tell us what you think

EC2 Dashboard EC2 Global View Events Tags Limits

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

Images AMIs AMI Catalog

Elastic Block Store Volumes

Feedback Looking for language selection? Find it in the new Unified Settings [?](#)

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Networking of the instance

The screenshot shows the AWS EC2 Management console interface. The left sidebar is collapsed, and the main area displays the 'Instances' page. A single instance, 'Web-Server' (i-0c5057254817697bd), is listed as 'Running' (t2.micro). The 'Networking' tab is selected in the instance details view, showing the following networking details:

Public IPv4 address	Private IPv4 addresses	VPC ID
44.192.37.95 open address	10.0.1.96	vpc-035bd9b38b8cfccc9 (Lab VPC)
Public IPv4 DNS	Private IP DNS name (IPv4 only)	
ec2-44-192-37-95.compute-1.amazonaws.com open address	ip-10-0-1-96.ec2.internal	
Subnet ID	IPV6 addresses	Secondary private IPv4 addresses
subnet-0536d582085f30cd2 (Public Subnet 1)	-	-
Availability zone	Carrier IP addresses (ephemeral)	Outpost ID
us-east-1a	-	-

At the bottom of the networking details, there is a note: "You can now check network connectivity with Reachability Analyzer." with a "Run Reachability Analyzer" button.

Page footer: Feedback, Looking for language selection? Find it in the new Unified Settings, © 2022, Amazon Web Services, Inc. or its affiliates., Privacy, Terms, Cookie preferences

Instance State: Running, Status Checks: 2/2 checks passed

The screenshot shows the AWS EC2 Management console interface. The left sidebar navigation includes links for EC2 Dashboard, EC2 Global View, Events, Tags, Limits, Instances (selected), Instance Types, Launch Templates, Spot Requests, Savings Plans, Reserved Instances (New), Dedicated Hosts, Scheduled Instances, Capacity Reservations, Images (AMIs, AMI Catalog), and Elastic Block Store (Volumes, Snapshots, Lifecycle Manager). The main content area displays the 'Instances' page with one instance listed:

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IP
Web-Server	i-0c5057254817697bd	Running	t2.micro	2/2 checks passed	No alarms	us-east-1a	ec2-44-192-37-95.eca...

The detailed view for the instance i-0c5057254817697bd (Web-Server) is shown below, with tabs for Details, Security, Networking, Storage, Status checks, Monitoring, and Tags. The Status checks tab indicates 2/2 checks passed.

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Task 2: Monitoring your instance

Choose the Status checks tab

The screenshot shows the AWS EC2 Management console interface. The left sidebar is collapsed, and the main content area displays the 'Instances' page. A single instance, 'Web-Server' (i-0c5057254817697bd), is listed. The 'Status checks' tab is selected in the navigation bar below the instance details. The 'Status checks' section contains two items: 'System status checks' (System reachability check passed) and 'Instance status checks' (Instance reachability check passed). A 'Report instance status' button is also present.

Lab 2 - Introduction to Amazon X Instances | EC2 Management X +

us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#Instances:

Getting Started Imported From Fir... Addons New Tab Network Research... IEEE/ACM Internat... Styles Archives -...

AWS Services Search [Option+S]

EC2 Dashboard EC2 Global View Events Tags Limits

▼ Instances

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

▼ Images

- AMIs
- AMI Catalog

▼ Elastic Block Store

- Volumes
- Snapshots
- Lifecycle Manager

Feedback Looking for language selection? Find it in the new Unified Settings

Instances (1/1) **Info**

Find instance by attribute or tag (case-sensitive)

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Publ
Web-Server	i-0c5057254817697bd	Running	t2.micro	2/2 checks passed	No alarms	us-east-1a	ec2-...

Instance: i-0c5057254817697bd (Web-Server)

Details Security Networking Storage **Status checks** Monitoring Tags Actions ▾

Status checks **Info**

Status checks detect problems that may impair i-0c5057254817697bd (Web-Server) from running your applications.

System status checks

System reachability check passed

Instance status checks

Instance reachability check passed

Report the instance status if our checks do not reflect your experience with this instance or if they do not detect issues you are having.

Report instance status

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Choose the Monitoring tab

The screenshot shows the AWS EC2 Management console interface. The left sidebar is collapsed, and the main area displays the 'Instances' page. A single instance, 'Web-Server' (i-0c5057254817697bd), is listed as 'Running' (t2.micro). The 'Monitoring' tab is selected in the instance details view, showing four metrics: CPU utilization (%), Status check failed (any), Status check failed (instance), and Status check failed (system). Below these are charts for Network in (bytes) and Network out (bytes).

Lab 2 - Introduction to Amazon X Instances | EC2 Management X +

us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#Instances:

Getting Started Imported From Fir... Addons New Tab Network Research... IEEE/ACM Internat... Styles Archives -...

AWS Services Search [Option+S]

EC2 Dashboard EC2 Global View Events Tags Limits

Instances (1/1) Info Find instance by attribute or tag (case-sensitive)

Name Instance ID Instance state Instance type Status check Alarm status Availability Zone Publ

Web-Server i-0c5057254817697bd Running t2.micro 2/2 checks passed No alarms + us-east-1a ec2-1

Instance: i-0c5057254817697bd (Web-Server)

Details Security Networking Storage Status checks Monitoring Tags

Manage detailed monitoring

1h 3h 12h 1d 3d 1w Custom

CPU utilization (%) Status check failed (any) (Count) Status check failed (instance) (Count) Status check failed (system) (Count)

Network in (bytes) Network out (bytes) Network packets in (count) Network packets out (count)

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Choose the Monitoring tab

The screenshot shows the AWS EC2 Management console interface. The top navigation bar includes tabs for 'Lab 2 - Introduction to Amazon' and 'Instances | EC2 Management'. The main content area is titled 'Instances (1/1) Info' and displays a single instance named 'Web-Server' with ID 'i-0c5057254817697bd', which is 'Running' on a 't2.micro' instance type. The 'Actions' dropdown menu is open, showing options like 'Launch instances', 'Stop instance', 'Start instance', 'Reboot instance', 'Delete instance', and 'Edit instance type'. Below the instance list, there is a detailed monitoring section for the selected instance, showing various metrics over time. The metrics are arranged in a grid:

Network in (bytes)	Network out (bytes)	Network packets in (count)	Network packets out (count)
Bytes 114M 56.8M 0	Bytes 327k 163k 0	Count 79.0k 39.5k 0	Count 6.80k 3.40k 0

Disk reads (bytes)	Disk read operations (operations)	Disk writes (bytes)	Disk write operations (operations)
Bytes 1 0.5 0	Count 1 0.5 0	Bytes 1 0.5 0	Count 1 0.5 0

At the bottom of the monitoring section, there are two additional metrics: 'CPU credit usage (count)' and 'CPU credit balance (count)'. The left sidebar contains navigation links for 'EC2 Dashboard', 'EC2 Global View', 'Events', 'Tags', 'Limits', 'Instances' (selected), 'Instance Types', 'Launch Templates', 'Spot Requests', 'Savings Plans', 'Reserved Instances', 'Dedicated Hosts', 'Scheduled Instances', 'Capacity Reservations', 'Images' (AMIs, AMI Catalog), and 'Elastic Block Store' (Volumes, Snapshots, Lifecycle Manager).

Lab 2 - Introduction to Amazon X Instances | EC2 Management X +

us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#Instances:

Getting Started Imported From Fir... Addons New Tab Network Research... IEEE/ACM Internat... Styles Archives -...

aws Services Search [Option+S] N. Virginia v voclabs/user2296696=Yoanes_Bandung @ 3307-7753-8072 ▾

EC2 Dashboard
EC2 Global View
Events
Tags
Limits

Instances (1/1) Info

Find instance by attribute or tag (case-sensitive)

Name	Instance ID	Instance state	Instance type	Status check
Web-Server	i-0c5057254817697bd	Running	t2.micro	2/2 checks passed

Actions ▾ Launch instances ▾

Connect
View details
Manage instance state
Instance settings
Networking
Security
Image and templates
Monitor and troubleshoot ▾

Zone ▾ Public ec2-1

Instance: i-0c5057254817697bd (Web-Server)

Details Security Networking Storage Status checks Monitoring

Get system log
Get instance screenshot
Manage detailed monitoring
Manage CloudWatch alarms
EC2 serial console
Replace root volume
Fleet Manager

Manage detailed monitoring Add to dashboard

1h 3h

CPU utilization (%)

Percent

57.5
28.8
0

23:55 00:55

Status check failed (any) (c...)

Count

1
0.5

23:55 00:55

Network in (bytes)

Bytes

Network out (bytes)

Bytes

Network packets in (count)

Count

Network packets out (count)

Count

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The system log displays the console output of the instance

The screenshot shows a browser window with the title "Lab 2 - Introduction to Amazon" and the tab "Get system log | EC2 Manager". The URL is "us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#GetSystemLog:instanceId=i-0c5057254817697bd". The AWS navigation bar includes "Getting Started", "Imported From Fir...", "Addons", "New Tab", "Network Research...", "IEEE/ACM Internat...", and "Styles Archives -...". The search bar has "[Option+S]". The region is "N. Virginia" and the user is "voclabs/user2296696=Yoanes_Bandung @ 3307-7753-8072". The breadcrumb navigation shows "EC2 > Instances > i-0c5057254817697bd > Get system log".

Get system log Info

When you experience issues with your EC2 instance, reviewing system logs can help you pinpoint the cause.

System log

Review system log for instance i-0c5057254817697bd as of Thu Dec 08 2022 08:00:21 GMT+0700 (Western Indonesia Time)

[42.914382] cloud-init[3242]: Complete!
[42.927755] cloud-init[3242]: Created symlink from /etc/systemd/system/multi-user.target.wants/httpd.service to /usr/lib/systemd/system/httpd.servi
[43.449890] xfs filesystem being remounted at /tmp supports timestamps until 2038 (0x7fffffff)
[43.463705] xfs filesystem being remounted at /var/tmp supports timestamps until 2038 (0x7fffffff)
[43.159133] cloud-init[3242]: ci-info: no authorized ssh keys fingerprints found for user ec2-user.
ci-info: no authorized ssh keys fingerprints found for user ec2-user.
<14>Dec 8 00:47:41 ec2:
<14>Dec 8 00:47:41 ec2: #####
<14>Dec 8 00:47:41 ec2: ----BEGIN SSH HOST KEY FINGERPRINTS----
<14>Dec 8 00:47:41 ec2: 256 SHA256:QaUYvW2WrFvkX7361+IHLW2W4maLDxfVv7iD1TRCcnk no comment (ECDSA)
<14>Dec 8 00:47:41 ec2: 256 SHA256:axlFS7+B76LZH7g0TJugmWFymhzklUgH9005W6VuV4R4 no comment (ED25519)
<14>Dec 8 00:47:41 ec2: 2048 SHA256:sD9Si7yOfjM19rke+xBzDvVJ6drR7/tLKfu992RAHs no comment (RSA)
<14>Dec 8 00:47:41 ec2: ----END SSH HOST KEY FINGERPRINTS----
<14>Dec 8 00:47:41 ec2: #####
-----BEGIN SSH HOST KEY KEYS-----
ecdsa-sha2-nistp256 AAAAE2VjZHNhLXNoYTItbmlzdHAyNTYAAAAIbmzdHAyNTYAAQBBH/jvhm00a4eo1z38F6Qn+Gz/Yz1znP0bH1LoYzXMRnJL0dAK7m6/Nz4XwoIH7TgEQNFEGwnsaYtq3
ssh-ed25519 AAAAC3NzaC1ZDI1NTES5AAAIn8UFcxstv/Ea8xgoM/CdfjeKfd3y7fsCfvTjMyoiDF
ssh-rsa AAAAB3NzaC1yc2EAAAQABAAQZ0A0zHlbEfxadLvakZQIbjCM7wlk5iJ6SW553u02V/MtKp0oVNT0LTGWp+3Mrftzvd9nlopW85gJZd47X2vaw4AXeJgIq0zXfbp7I/7WHYtcmz
-----END SSH HOST KEY KEYS-----
[43.381760] cloud-init[3242]: Cloud-init v. 19.3-46.amzn2 finished at Thu, 08 Dec 2022 00:47:41 +0000. Datasource DataSourceEc2. Up 43.37 seconds

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Scroll through the output, and note that the HTTP package was installed

The screenshot shows the AWS CloudWatch System Log interface. The browser tab is titled "Lab 2 - Introduction to Amazon" and the sub-tab is "Get system log | EC2 Manager". The URL is "us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#GetSystemLog:instanceId=i-0c5057254817697bd". The AWS navigation bar includes "Getting Started", "Imported From Fir...", "Addons", "New Tab", "Network Research...", "IEEE/ACM Internat...", and "Styles Archives -...". The search bar contains "[Option+S]". The region is "N. Virginia" and the user is "voclabs/user2296696=Yoanes_Bandung @ 3307-7753-8072". The main content area is titled "System log" and shows the log output for instance i-0c5057254817697bd as of Thu Dec 08 2022 08:00:21 GMT+0700 (Western Indonesia Time). The log output is as follows:

```
[ 42.814946] cloud-init[3242]: Installed:  
[ 42.826239] cloud-init[3242]: httpd.x86_64 0:2.4.54-1.amzn2  
[ 42.829932] cloud-init[3242]: Dependency Installed:  
[ 42.841936] cloud-init[3242]: apr.x86_64 0:1.7.0-9.amzn2  
[ 42.845940] cloud-init[3242]: apr-util.x86_64 0:1.6.1-5.amzn2.0.2  
[ 42.854091] cloud-init[3242]: apr-util-bdb.x86_64 0:1.6.1-5.amzn2.0.2  
[ 42.863020] cloud-init[3242]: generic-logos-httdp.noarch 0:18.0.0-4.amzn2  
[ 42.876701] cloud-init[3242]: httpd-filesystem.noarch 0:2.4.54-1.amzn2  
[ 42.890259] cloud-init[3242]: httpd-tools.x86_64 0:2.4.54-1.amzn2  
[ 42.894645] cloud-init[3242]: mailcap.noarch 0:2.1.41-2.amzn2  
[ 42.902534] cloud-init[3242]: mod_http2.x86_64 0:1.15.19-1.amzn2.0.1  
[ 42.914382] cloud-init[3242]: Complete!  
[ 42.927755] cloud-init[3242]: Created symlink from /etc/systemd/system/multi-user.target.wants/httpd.service to /usr/lib/systemd/system/httpd.service.  
[ 43.449890] xfs filesystem being remounted at /tmp supports timestamps until 2038 (0x7fffffff)  
[ 43.463705] xfs filesystem being remounted at /var/tmp supports timestamps until 2038 (0x7fffffff)  
[ 43.159133] cloud-init[3242]: ci-info: no authorized ssh keys fingerprints found for user ec2-user.  
ci-info: no authorized ssh keys fingerprints found for user ec2-user.  
<14>Dec 8 00:47:41 ec2:  
<14>Dec 8 00:47:41 ec2: #####  
<14>Dec 8 00:47:41 ec2: -----BEGIN SSH HOST KEY FINGERPRINTS-----
```

Below the log output, there is a message: "For boot or networking issues, use the EC2 serial console for troubleshooting. Choose the **Connect** button to start a session." A "Connect" button is available. At the bottom right, there is a "Cancel" button.

In Actions dropdown menu, and select Monitor and troubleshoot Get instance screenshot

The screenshot shows the AWS EC2 Management console interface. On the left, there's a sidebar with various navigation options like EC2 Dashboard, EC2 Global View, Events, Tags, Limits, Instances (selected), Instance Types, Launch Templates, Spot Requests, Savings Plans, Reserved Instances, Dedicated Hosts, Scheduled Instances, Capacity Reservations, Images, AMIs, AMI Catalog, and Elastic Block Store Volumes.

The main content area displays a table titled "Instances (1/1) Info" with one row for a "Web-Server" instance. The instance details are: Name: Web-Server, Instance ID: i-0c5057254817697bd, Instance state: Running, Instance type: t2.micro, Status check: 2/2 checks passed.

A context menu is open over the "Web-Server" instance, specifically under the "Actions" dropdown. The "Get instance screenshot" option is highlighted with a blue border. Other visible options in the menu include Connect, View details, Manage instance state, Instance settings, Networking, Security, Image and templates, and Monitor and troubleshoot.

At the bottom of the page, there are links for Feedback, Language selection, Copyright notice (© 2022, Amazon Web Services, Inc. or its affiliates.), Privacy, Terms, and Cookie preferences.

Command Line Interface

The screenshot shows a browser window with two tabs: "Lab 2 - Introduction to Amazon" and "Get instance screenshot | EC2". The main content is a screenshot of an EC2 instance's terminal session. The terminal output is as follows:

```
Amazon Linux 2
Kernel 5.10.147-133.644.amzn2.x86_64 on an x86_64

ip-10-0-1-96 login: [ 43.449890] xfs filesystem being remounted at /tmp supports timestamps until 2038 (0x7fffffff)
[ 43.463705] xfs filesystem being remounted at /var/tmp supports timestamps until 2038 (0x7fffffff)
```

Below the terminal window, there is a note: "For boot or networking issues, use the EC2 serial console for troubleshooting. Choose the Connect button." The browser footer includes links for Feedback, Language selection, Connect, Copyright (2022), Privacy, Terms, and Cookie preferences.



Task 3: Updating your security group and accessing the web server

Choose Details

The screenshot shows the AWS EC2 Management console interface. The left sidebar navigation includes:

- EC2 Dashboard
- EC2 Global View
- Events
- Tags
- Limits
- Instances
 - Instances New
 - Instance Types
 - Launch Templates
 - Spot Requests
 - Savings Plans
 - Reserved Instances New
 - Dedicated Hosts
 - Scheduled Instances
 - Capacity Reservations
- Images
 - AMIs
 - AMI Catalog
- Elastic Block Store
 - Volumes
 - Snapshots
 - Lifecycle Manager

The main content area displays the "Instances (1/1) Info" section. A table lists one instance:

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Publ
Web-Server	i-0c5057254817697bd	Running	t2.micro	2/2 checks passed	No alarms	us-east-1a	ec2-1

Below the table, the "Instance: i-0c5057254817697bd (Web-Server)" details are shown. The "Details" tab is selected, displaying the following information:

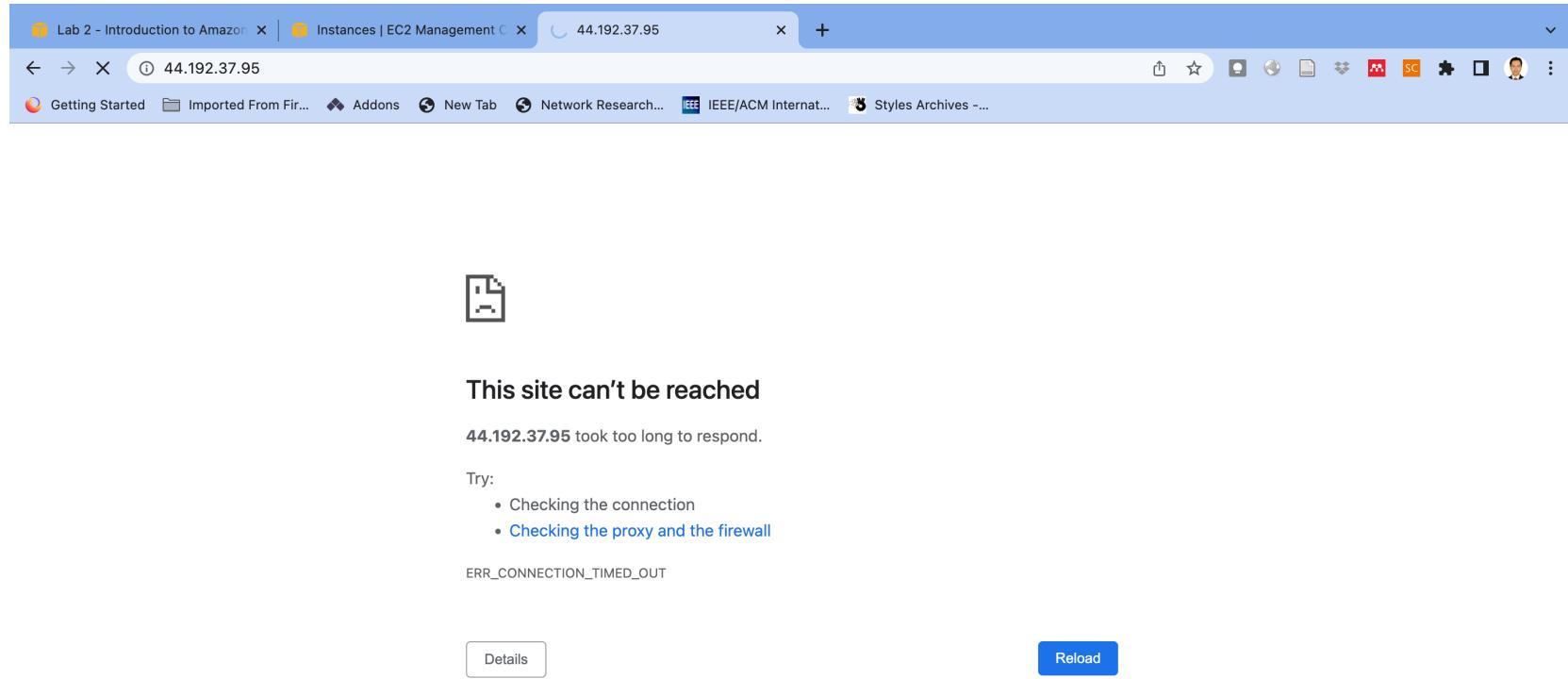
Instance summary	Info	Public IPv4 address	Private IPv4 addresses
Instance ID	i-0c5057254817697bd (Web-Server)	44.192.37.95 open address	10.0.1.96
IPv6 address	-	Instance state	Public IPv4 DNS
Hostname type	IP name: ip-10-0-1-96.ec2.internal	Running	ec2-44-192-37-95.compute-1.amazonaws.com open address
Answer private resource DNS name	IPv4 (A)	Private IP DNS name (IPv4 only)	Elastic IP addresses
Auto-assigned IP address	44.192.37.95 [Public IP]	ip-10-0-1-96.ec2.internal	-
		Instance type	AWS Compute Optimizer finding
		t2.micro	Opt-in to AWS Compute Optimizer for recommendation
		VPC ID	\$.
		vpc-035bd9b38b8cfccc9 (Lab VPC)	

At the bottom of the page, there are links for Feedback, Language selection, Copyright notice (© 2022, Amazon Web Services, Inc. or its affiliates.), Privacy, Terms, and Cookie preferences.

Copy Public IP Address and paste to browser

- ▶ Paste 44.192.37.95 to your browser
- ▶ Question: Are you able to access your web server? Why not?

The security group is not permitting inbound traffic on port 80



Return to the EC2 Management Console tab

The screenshot shows the AWS EC2 Management Console interface. The left sidebar navigation includes:

- 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
- Capacity Reservations
- Images**
- AMIs
- AMI Catalog
- Elastic Block Store**
- Volumes
- Snapshots
- Lifecycle Manager

The main content area displays the following information for the selected instance:

Instances (1/1) Info

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IP
Web-Server	i-0c5057254817697bd	Running	t2.micro	2/2 checks passed	No alarms	us-east-1a	ec2-44.192.37.95

Instance: i-0c5057254817697bd (Web-Server)

Security groups:
sg-057adca8c9341e156 (Web Server security group)

Inbound rules (No rules to display)

Outbound rules (No rules to display)

At the bottom, there are links for Feedback, Language selection, Copyright notice (© 2022, Amazon Web Services, Inc. or its affiliates.), Privacy, Terms, and Cookie preferences.

Edit inbound rules

The screenshot shows the AWS EC2 Management console with the URL us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#SecurityGroup:securityGroupId=sg-057adca8c9341e156. The page displays the details of a security group named "sg-057adca8c9341e156 - Web Server security group". The "Inbound rules" tab is selected, showing a table with one row: "No security group rules found". The left sidebar contains navigation links for EC2 Dashboard, EC2 Global View, Events, Tags, Limits, Instances (with sub-links for Instances, Instance Types, Launch Templates, Spot Requests, Savings Plans, Reserved Instances, Dedicated Hosts, Scheduled Instances, Capacity Reservations), Images (with sub-links for AMIs, AMI Catalog), and Elastic Block Store (with sub-links for Volumes, Snapshots, Lifecycle Manager).

Lab 2 - Introduction to Amazon X Instances | EC2 Management X 44.192.37.95 X | +

Getting Started Imported From Fir... Addons New Tab Network Research... IEEE/ACM Internat... Styles Archives -...

aws Services Search [Option+S] N. Virginia v vocabs/user2296696=Yoanes_Bandung @ 3307-7753-8072 ▾

EC2 Dashboard EC2 Global View Events Tags Limits

▼ Instances

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

▼ Images

- AMIs
- AMI Catalog

▼ Elastic Block Store

- Volumes
- Snapshots
- Lifecycle Manager

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44.192.37.95 us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#SecurityGroup:securityGroupId=sg-057adca8c9341e156

EC2 > Security Groups > sg-057adca8c9341e156 - Web Server security group

sg-057adca8c9341e156 - Web Server security group

Actions ▾

Details			
Security group name	Security group ID	Description	VPC ID
Web Server security group	sg-057adca8c9341e156	launch-wizard-1 created 2022-12-08T00:42:03.876Z	vpc-035bd9b38b8cfccc9
Owner	Inbound rules count	Outbound rules count	
330777538072	0 Permission entries	1 Permission entry	

Inbound rules Outbound rules Tags

You can now check network connectivity with Reachability Analyzer [Run Reachability Analyzer](#) X

Inbound rules

Filter security group rules

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

Manage tags Edit inbound rules

Feedback Looking for language selection? Find it in the new Unified Settings [?](#)

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Type: Choose HTTP, Source: Choose Anywhere-IPv4

The screenshot shows the AWS EC2 Management console with the URL us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#ModifyInboundSecurityGroupRules:securityGroupId=sg-057adca8c.... The page title is "Edit inbound rules" for the security group "sg-057adca8c9341e156 - Web Server security group".

The "Inbound rules" table has the following data:

Security group rule ID	Type	Protocol	Port range	Source	Description - optional
-	HTTP	TCP	80	Anywh...	0.0.0.0/0

Buttons at the bottom include "Add rule", "Delete", "Cancel", "Preview changes", and "Save rules".

Page footer: Feedback, Looking for language selection? Find it in the new Unified Settings, © 2022, Amazon Web Services, Inc. or its affiliates., Privacy, Terms, Cookie preferences.

Save Rules

The screenshot shows the AWS EC2 Management console with a success message and the security group details page.

Success Message:

- Message: Inbound security group rules successfully modified on security group (sg-057adca8c9341e156 | Web Server security group)
- Details link

Security Group Details:

- EC2 > Security Groups > sg-057adca8c9341e156 - Web Server security group
- Actions ▾**
- Details**
- Security group name: Web Server security group
- Security group ID: sg-057adca8c9341e156
- Description: launch-wizard-1 created 2022-12-08T00:42:03.876Z
- VPC ID: vpc-035bd9b38b8cfccc9
- Owner: 330777538072
- Inbound rules count: 1 Permission entry
- Outbound rules count: 1 Permission entry

Inbound rules (1/1):

- Filter security group rules
- Manage tags
- Edit inbound rules
- Previous < 1 Next >
- Settings gear icon

Bottom Navigation and Footer:

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- Terms
- Cookie preferences

Return to the web server browser tab



Hello From Your Web Server!



Task 4: Resizing your instance - instance type and EBS volume

Stop your instance

The screenshot shows the AWS EC2 Management console interface. On the left, there's a sidebar with navigation links for Home, EC2 Dashboard, EC2 Global View, Events, Tags, Limits, Instances (with sub-links for Instances, Instance Types, Launch Templates, Spot Requests, Savings Plans, Reserved Instances, Dedicated Hosts, Scheduled Instances, Capacity Reservations), Images (AMIs, AMI Catalog), and Elastic Block Store (Volumes). The main content area is titled 'Instances (1/1) Info' and shows a single instance named 'Web-Server' with ID i-02f0f924d33a31976, which is currently 'Running' (t2.micro). A context menu is open over this instance, listing actions: Stop instance, Start instance, Reboot instance, Hibernate instance, and Terminate instance. Below the instance list, there's a detailed view for 'Instance: i-02f0f924d33a31976 (Web-Server)' with tabs for Details, Security, Networking, Storage, Status checks, Monitoring, and Tags. The Details tab is selected, showing fields like Instance ID, Public IPv4 address, Private IPv4 addresses, Instance state, Public IPv4 DNS, Hostname type, IP name, Answer private resource DNS name, Instance type, Auto-assigned IP address, VPC ID, and AWS Compute Optimizer finding.

Screenshot of the AWS EC2 Management console showing the Instances page and a modal dialog for stopping an instance.

The main interface shows a single instance named "Web-Server" (i-02f0f924d33a31976) in the "Running" state. A modal dialog titled "Stop instance?" is open, prompting the user to confirm the action. The dialog contains the instance ID "i-02f0f924d33a31976 (Web-Server)" and a confirmation message: "To confirm that you want to stop the instance, choose the Stop button below." The "Stop" button is highlighted with a red border.

The left sidebar lists various AWS services and features:

- New EC2 Experience (selected)
- EC2 Dashboard
- EC2 Global View
- Events
- Tags
- Limits
- Instances
 - Instances (New)
 - Instance Types
 - Launch Templates
 - Spot Requests
 - Savings Plans
 - Reserved Instances (New)
 - Dedicated Hosts
 - Scheduled Instances
 - Capacity Reservations
- Images
 - AMIs
 - AMI Catalog
- Elastic Block Store
 - Volumes

At the bottom, there are links for Feedback, Unified Settings, Copyright notice (© 2022, Amazon Web Services, Inc. or its affiliates.), Privacy, Terms, and Cookie preferences.

Home | Lab 2 - Introduction to Amazon | Instances | EC2 Management | +

https://us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#Instances:sort=desc:instanceState|

Getting Started Imported From Fir... Addons New Tab Network Research... IEEE/ACM Internat... Styles Archives -...

aws Services Search [Option+S] N. Virginia v vocabs/user2296696=Yoanes_Bandung @ 3307-7753-8072 ▾

New EC2 Experience Tell us what you think X

Successfully stopped i-02f0f924d33a31976

Instances (1/1) Info C Connect Instance state Actions Launch instances < 1 > 🔍

Find instance by attribute or tag (case-sensitive)

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Pub
Web-Server	i-02f0f924d33a31976	Stopped	t2.micro	2/2 checks passed	No alarms	us-east-1a	-

Instance: i-02f0f924d33a31976 (Web-Server)

Details Security Networking Storage Status checks Monitoring Tags

Instance summary Info

Instance ID i-02f0f924d33a31976 (Web-Server)	Public IPv4 address 44.205.11.121 open address	Private IPv4 addresses 10.0.1.193
IPv6 address -	Instance state Stopping	Public IPv4 DNS ec2-44-205-11-121.compute-1.amazonaws.com open address
Hostname type IP name: ip-10-0-1-193.ec2.internal	Private IP DNS name (IPv4 only) ip-10-0-1-193.ec2.internal	Elastic IP addresses -
Answer private resource DNS name IPV4 (A)	Instance type t2.micro	AWS Compute Optimizer finding Opt-in to AWS Compute Optimizer for recommendation
Auto-assigned IP address 44.205.11.121 [Public IP]	VPC ID vpc-0b6473da8f1b86a9f (Lab VPC)	S.

Feedback Looking for language selection? Find it in the new Unified Settings

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Change the instance type

The screenshot shows the AWS EC2 Management console interface. On the left, there's a navigation sidebar with sections like EC2 Dashboard, EC2 Global View, Events, Tags, Limits, Instances (with sub-options like Instances, Instance Types, Launch Templates, etc.), Images, AMIs, and Elastic Block Store. The main content area displays a table of instances, with one row selected for a Web-Server named "i-02f0f924d33a31976". A context menu is open over this instance, with the "Change instance type" option highlighted. The menu also includes other options like Attach to Auto Scaling Group, Change termination protection, Change stop protection, Change shutdown behavior, Change auto-recovery behavior, Change Nitro Enclaves, Change credit specification, Change resource based naming options, Modify instance placement, Modify Capacity Reservation settings, Edit user data, Allow tags in instance metadata, Manage tags, and AWS Compute Optimizer finding.

Successfully stopped i-02f0f924d33a31976

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

Find instance by attribute or tag (case-sensitive)

Name	Instance ID	Instance state	Instance type	Status check
Web-Server	i-02f0f924d33a31976	Stopped	t2.micro	2/2 checks passed

Instance: i-02f0f924d33a31976 (Web-Server)

Details Security Networking Storage Status checks

Instance summary [Info](#)

Instance ID i-02f0f924d33a31976 (Web-Server)	Public IPv4 address 44.205.11.121 op
IPv6 address -	Instance state Stopping
Hostname type IP name: ip-10-0-1-193.ec2.internal	Private IP DNS name (IP) ip-10-0-1-193.ec2.
Answer private resource DNS name IPV4 (A)	Instance type t2.micro
Auto-assigned IP address 44.205.11.121 [Public IP]	VPC ID vpc-0b6473da8f1b86a9f (Lab VPC)

Actions ▾ [Launch instances](#)

Connect View details Manage instance state

Zone ▾ | Public

Instance settings ▾

Networking ▾

Security ▾

Image and templates ▾

Monitor and troubleshoot ▾

Change instance type

Change Nitro Enclaves

Change credit specification

Change resource based naming options

Modify instance placement

Modify Capacity Reservation settings

Edit user data

Allow tags in instance metadata

Manage tags

AWS Compute Optimizer finding

Opt-in to AWS Compute Optimizer for recommendation

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Instance type: Select t2.nano

The screenshot shows the 'Change instance type' dialog box on the AWS EC2 console. The URL in the browser is `us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#ChangeInstanceType:instanceId=i-02f0f924d33a31976`. The dialog has the following fields:

- Instance ID:** `i-02f0f924d33a31976 (Web-Server)`
- Current instance type:** `t2.micro`
- Instance type:** A dropdown menu set to `t2.nano`.
- EBS-optimized:** A checkbox is present but disabled, with the note: "EBS-optimized is not supported for this instance type".

At the bottom right of the dialog are the `Cancel` and `Apply` buttons.

Page Footer:

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- Terms
- Cookie preferences

Resize the EBS volume

The screenshot shows the AWS EC2 Volumes Management console. On the left, there's a navigation sidebar with sections like 'Savings Plans', 'Reserved Instances', 'Dedicated Hosts', 'Scheduled Instances', 'Capacity Reservations', 'Images', 'AMIs', 'AMI Catalog', 'Elastic Block Store' (with 'Volumes' selected), 'Network & Security', 'Load Balancing', and 'Auto Scaling'. The main content area has tabs for 'Home', 'Lab 2 - Introduction to Amazon...', and 'Volumes | EC2 Management'. A message at the top says: 'You can now create Amazon Data Lifecycle Manager policies to automate snapshot management directly from this screen. Select the volumes to back up, and then choose Actions, Create snapshot lifecycle policy. For more information, see the Knowledge Center article.' Below this is a table titled 'Volumes (1/1)' with one row:

<input checked="" type="checkbox"/>	Name	Volume ID	Type	Size	IOPS	Throughput	Snapshot	Created
<input checked="" type="checkbox"/>	Web-Server	vol-01b7a91d7c908fe84	gp2	8 GiB	100	-	snap-0cc1831...	2022/12/05 08:30 GMT+7

At the bottom, there's a detailed view for the selected volume: 'Volume ID: vol-01b7a91d7c908fe84 (Web-Server)' with tabs for 'Details', 'Status checks', 'Monitoring', and 'Tags'. The footer includes links for 'Feedback', 'Language selection', '© 2022, Amazon Web Services, Inc. or its affiliates.', 'Privacy', 'Terms', and 'Cookie preferences'.

The disk volume currently has a size of 8 GiB

A screenshot of a web browser displaying the AWS Management Console. The URL in the address bar is `us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#ModifyVolume:volumId=vol-01b7a91d7c908fe84`. The page title is "Modify volume | EC2 Manager". The browser tabs include "Home", "Lab 2 - Introduction to Amazon...", and "Modify volume | EC2 Manager". The AWS navigation bar shows "Services" selected. The main content area shows the "Modify volume" page for an EBS volume with Volume ID `vol-01b7a91d7c908fe84`. The volume type is set to "General Purpose SSD (gp2)". The current size is listed as "8 GiB". A note below the size field states: "Min: 1 GiB, Max: 16384 GiB. The value must be an integer." The IOPS setting is "100/3000". At the bottom right are "Cancel" and "Modify" buttons.

EC2 > Volumes > vol-01b7a91d7c908fe84 > Modify volume

Modify volume Info

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

Volume details	
Volume ID	<input type="text" value="vol-01b7a91d7c908fe84 (Web-Server)"/>
Volume type	<input type="text" value="General Purpose SSD (gp2)"/>
Size (GiB)	<input type="text" value="8"/> <small>Info</small>
Min: 1 GiB, Max: 16384 GiB. The value must be an integer.	
IOPS	<input type="text" value="100/3000"/> <small>Info</small>
Baseline of 3 IOPS per GiB with a minimum of 100 IOPS, burstable to 3000 IOPS.	

Cancel Modify

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Change the Size (GiB) to 10

The screenshot shows the AWS Management Console interface for modifying an EBS volume. The URL in the browser is `us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#ModifyVolume:volumId=vol-01b7a91d7c908fe84`. The page title is "Modify volume | EC2 Manager". The breadcrumb navigation shows "EC2 > Volumes > vol-01b7a91d7c908fe84 > Modify volume".

Volume details

Volume ID: vol-01b7a91d7c908fe84 (Web-Server)

Volume type: General Purpose SSD (gp2)

Size (GiB): 10 (Info)

Min: 1 GiB, Max: 16384 GiB. The value must be an integer.

IOPS: 100/3000

Baseline of 3 IOPS per GiB with a minimum of 100 IOPS, burstable to 3000 IOPS.

Buttons at the bottom: Cancel (gray), Modify (orange).

Confirm and increase the size of the volume

The screenshot shows a browser window for the AWS EC2 Management Console. The URL is `us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#ModifyVolume:volumId=vol-01b7a91d7c908fe84`. The page title is "Modify volume | EC2 Manager". The navigation bar includes "Home", "Lab 2 - Introduction to Amazon", and "Modify volume | EC2 Manager". Below the navigation bar are links for "Getting Started", "Imported From Fir...", "Addons", "New Tab", "Network Research...", "IEEE/ACM Internat...", and "Styles Archives -...". The main menu bar has "aws" and "Services" selected. A search bar contains "[Option+S]". The top right corner shows "N. Virginia" and the user "voclabs/user2296696=Yoanes_Bandung @ 3307-7753-8072". The left sidebar shows "EC2 > Volumes > vol-01b7a91d7c908fe84 > Modify volume". The main content area is titled "Modify volume" with an "Info" link. It says "Modify the type, size, and performance of an EBS volume." On the left, there's a "Volume details" section with fields for "Volume ID" (vol-01b7a91d7c908fe84 (Web-Server)), "Volume type" (General Purpose SSD (gp2)), "Size (GiB)" (10), and "IOPS" (100/3000). A modal dialog box is open, titled "Modify vol-01b7a91d7c908fe84?", containing instructions about file system extension, a note about modification time and cost, and a confirmation question. At the bottom of the dialog are "Cancel" and "Modify" buttons. Below the dialog, there are "Cancel" and "Modify" buttons for the main page.

Volume details

Volume ID
vol-01b7a91d7c908fe84 (Web-Server)

Volume type
General Purpose SSD (gp2)

Size (GiB)
10

IOPS
100/3000

Modify vol-01b7a91d7c908fe84?

If you are increasing the size of the volume, you must extend the file system to the new size of the volume. You can only do this when the volume enters the optimizing state. For more information see extending the file system for [Linux](#) and [Windows](#).

The modification might take a few minutes to complete.

You are charged for the new volume configuration after volume modification starts. For pricing information, see [Amazon EBS Pricing](#).

Are you sure that you want to modify vol-01b7a91d7c908fe84?

Cancel **Modify**

Cancel **Modify**

Feedback Looking for language selection? Find it in the new Unified Settings [\[?\]](#)

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Instance type changed successfully

The screenshot shows the AWS EC2 Management console with a success message: "Instance type changed successfully". The main table displays one instance named "Web-Server" with ID "i-02f0f924d33a31976", which is currently "Stopped" and of type "t2.nano". A context menu is open over this instance, with "Start instance" highlighted. The left sidebar lists various services like EC2 Dashboard, Instance Types, and Launch Templates. The bottom navigation bar includes links for Feedback, Unified Settings, Copyright notice, Privacy, Terms, and Cookie preferences.

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

Find instance by attribute or tag (case-sensitive)

Name	Instance ID	Instance state	Instance type
Web-Server	i-02f0f924d33a31976	Stopped	t2.nano

Actions ▾ [Launch instances](#)

Instance state ▾

- Stop instance
- Start instance**
- Reboot instance
- Hibernate instance
- Terminate instance

Instance: i-02f0f924d33a31976 (Web-Server)

Details Security Networking Storage Status checks Monitoring Tags

Instance summary [Info](#)

Instance ID i-02f0f924d33a31976 (Web-Server)	Public IPv4 address -	Private IPv4 addresses 10.0.1.193
IPv6 address -	Instance state Stopped	Public IPv4 DNS -
Hostname type IP name: ip-10-0-1-193.ec2.internal	Private IP DNS name (IPv4 only) ip-10-0-1-193.ec2.internal	Elastic IP addresses -
Answer private resource DNS name IPv4 (A)	Instance type t2.nano	AWS Compute Optimizer finding Opt-in to AWS Compute Optimizer for recommendation
Auto-assigned IP address -	VPC ID vpc-0b6473da8f1b86a9f (Lab VPC)	s. Learn more

Feedback Looking for language selection? Find it in the new Unified Settings [?](#)

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Start the resized instance

The screenshot shows the AWS EC2 Management console interface. At the top, there are three tabs: 'Home', 'Lab 2 - Introduction to Amazon...', and 'Instances | EC2 Management'. The main content area displays a success message: 'Successfully started i-02f0f924d33a31976' and 'Instance type changed successfully'. Below this, the 'Instances (1/1)' section is shown, listing a single instance named 'Web-Server' with ID 'i-02f0f924d33a31976', which is currently 'Running' on a 't2.nano' instance type. The 'Actions' dropdown menu is open, showing options like 'Launch instances'. On the left sidebar, under the 'Instances' section, the 'Instances' link is highlighted. The bottom of the page includes standard AWS footer links for 'Feedback', 'Language selection', 'Copyright', 'Privacy', 'Terms', and 'Cookie preferences'.



Task 5: Exploring EC2 limits

There are default limits on these resources on a per-Region basis

The screenshot shows the AWS EC2 Management Console in the 'us-east-1' region. The left sidebar lists various services: New EC2 Experience, EC2 Dashboard, EC2 Global View, Events, Tags, Limits (selected), Instances (with sub-options like Instances, Instance Types, Launch Templates, Spot Requests, Savings Plans, Reserved Instances, Dedicated Hosts, Scheduled Instances, Capacity Reservations), Images (AMIs, AMI Catalog), and Elastic Block Store (Volumes). The main content area is titled 'Limits' and displays a table of current limits. The table has columns for Name, Limit type, Current limit, and Description. It lists four entries for Dedicated Hosts:

Name	Limit type	Current limit	Description
Running R3 Dedicated Hosts	Dedicated Hosts	1	-
Running R4 Dedicated Hosts	Dedicated Hosts	1	-
Running R5 Dedicated Hosts	Dedicated Hosts	1	-
Running M5N Dedicated Hosts	Dedicated Hosts	1	-

At the top of the main content area, there are error messages for each of the listed resources: Auto scaling limits, Load balancer limits, and Auto scaling limits. The status bar at the bottom indicates the page is on 'Feedback' and shows language selection options.



Task 6: Testing termination protection

Choose Instances

The screenshot shows the AWS EC2 Management console with the following details:

- Instances (1/1) Info**: Shows 1 instance.
- Instance state**: The instance is currently **Running**.
- Actions**: A dropdown menu is open, showing options: **Stop instance** (highlighted), **Start instance**, **Reboot instance**, **Hibernate instance**, and **Terminate instance**.
- Instance Details**:
 - Instance ID**: i-02f0f924d33a31976 (Web-Server)
 - Public IPv4 address**: 3.239.172.165
 - Private IPv4 addresses**: 10.0.1.193
 - Public IPv4 DNS**: ec2-3-239-172-165.compute-1.amazonaws.com
 - Private IP DNS name (IPv4 only)**: ip-10-0-1-193.ec2.internal
 - Instance type**: t2.nano
 - VPC ID**: vp-0b6473da8f1b86a9f (Lab VPC)
- Tags**: None listed.

Sidebar Navigation:

- New EC2 Experience
- EC2 Dashboard
- EC2 Global View
- Events
- Tags
- Limits
- Instances
 - Instances (New)
 - Instance Types
 - Launch Templates
 - Spot Requests
 - Savings Plans
 - Reserved Instances (New)
 - Dedicated Hosts
 - Scheduled Instances
 - Capacity Reservations
- Images
 - AMIs
 - AMI Catalog
- Elastic Block Store
 - Volumes

Page Footer:

- Feedback
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Choose Terminate instance

The screenshot shows the AWS EC2 Management console interface. On the left, a sidebar menu is open under the 'Instances' heading, showing options like Instances, Instance Types, Launch Templates, and so on. The main content area displays a table of instances. One instance, named 'Web-Server' with the ID i-02f0f924d33a31976, is selected. A modal dialog box titled 'Stop instance?' is overlaid on the page, asking for confirmation to stop the instance. The dialog includes the instance ID, a confirmation message, and 'Cancel' and 'Stop' buttons.

Instances (1/1) Info

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Publ
Web-Server	i-02f0f924d33a31976	Running	t2.nano	Initializing	No alarms	us-east-1a	ec2-

Stop instance?

Instance IDs
i-02f0f924d33a31976 (Web-Server)

To confirm that you want to stop the instance, choose the **Stop** button below.

Cancel **Stop**

Instance: i-02f0f924d33a31976 (Web-Server)

Details Security Networking

Instance summary Info

Instance ID
i-02f0f924d33a31976 (Web-Server)

IPv6 address
-

Hostname type
IP name: ip-10-0-1-193.ec2.internal

Private IP DNS name (IPv4 only)
ip-10-0-1-193.ec2.internal

Answer private resource DNS name
IPv4 (A)

Instance type
t2.nano

Elastic IP addresses
-

Auto-assigned IP address
3.239.172.165 [Public IP]

VPC ID
vpc-0b6473da8f1b86a9f (Lab VPC)

AWS Compute Optimizer finding
Opt-in to AWS Compute Optimizer for recommendation

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Screenshot of the AWS EC2 Management console showing the Instances page.

The browser tab is titled "Lab 2 - Introduction to Amazon EC2".

The URL is "us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1#Instances:sort=desc:instanceTypeFilter".

The sidebar navigation includes:

- New EC2 Experience (selected)
- EC2 Dashboard
- EC2 Global View
- Events
- Tags
- Limits
- Instances
 - Instances (New)
 - Instance Types
 - Launch Templates
 - Spot Requests
 - Savings Plans
 - Reserved Instances (New)
 - Dedicated Hosts
 - Scheduled Instances
 - Capacity Reservations
- Images
 - AMIs
 - AMI Catalog
- Elastic Block Store
 - Volumes

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

Name	Instance ID	Instance state	Instance type
Web-Server	i-02f0f924d33a31976	Stopped	t2.nano

The "Actions" dropdown menu is open, showing the following options:

- Stop instance
- Start instance
- Reboot instance
- Hibernate instance
- Terminate instance (highlighted with a blue box)

The "Select an instance" modal is displayed at the bottom of the page.

Page footer:

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Home Lab 2 - Introduction to Amazon Instances | EC2 Management

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aws EDC101v1EN Assignments Lab 2 - Introduction to Amazon EC2

Lab 2 - Introduction to Amazon EC2

Home Modules Due No Due Date Points 100 Submitting an external tool

Submit Details AWS Start Lab End Lab 00:00:00 Instructions Grades Actions

End Lab

Region: us-east-1
Lab ID: arn:aws:cloudformation:us-east-1:330777538072:stack/c35460a46649113240325t1w330777538072/75696500-743a-11ed-a28d-0e9eac0d0f09
Creation Time: 2022-12-04T17:16:34-0800
You may close this message box now. Lab resources are terminating ...

Source 5/20

This lab has been completed successfully. You can now close this window.

With the web service interface of Amazon EC2, you can

◀ Previous Next ▶

THANK
YOU

