

Step 1: Creating VPC

The screenshot shows two side-by-side browser windows. The left window is a Cloud9 IDE for Lab 2, and the right window is the AWS Management Console's 'Create VPC' wizard.

Cloud9 IDE (Left):

- Lab name: ACFv2EN-55083
- Lab title: Lab 2 - Build your VPC and Launch a Web Server
- Actions dropdown: EN-US, Change PRIVATE SUBNET CIDR BLOCK to us-east-1a to 10.0.1.0/24
- Instructions:
 - Set NAT gateways to In 1 AZ.
 - Set VPC endpoints to None.
 - Keep both DNS hostnames and DNS resolution enabled.
- Preview panel: VPC: lab-vpc

AWS Management Console (Right):

- Step: Create VPC
- Tenancy: Default
- Number of Availability Zones (AZs): 1
- Number of public subnets: 1
- Number of private subnets: 0
- Customize subnets CIDR blocks:
 - Public subnet CIDR block in us-east-1a: 10.0.0.0/24 (256 IPs)
 - Private subnet CIDR block in us-east-1a: 10.0.128.0/24 (256 IPs)
- NAT gateways (\$): In 1 AZ
- VPC endpoints: None
- Preview panel: VPC: lab-vpc

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Lab 2 - Build your VPC and Launch a Web Server

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us-east-1a to 10.0.1.0/24

- Set **NAT gateways** to **In 1 AZ**.
- Set **VPC endpoints** to **None**.
- Keep both **DNS hostnames** and **DNS resolution enabled**.

8. In the *Preview* panel on the right, confirm the settings you have configured.

- **VPC:** lab-vpc

VPC | us-east-1

VPC > Your VPCs > Create VPC

Choose the number of Availability Zones (AZs) in which to create NAT gateways. Note that there is a charge for each NAT gateway.

None	In 1 AZ	1 per AZ
------	---------	----------

VPC endpoints [Info](#)
Endpoints can help reduce NAT gateway charges and improve security by accessing S3 directly from the VPC. By default, full access policy is used. You can customize this policy at any time.

None	S3 Gateway
------	------------

DNS options [Info](#)
 Enable DNS hostnames
 Enable DNS resolution

▶ Additional tags

Cancel **Create VPC**

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Lab 2 - Build your VPC and Launch a Web Server

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us-east-1a to 10.0.1.0/24

- Set **NAT gateways** to **In 1 AZ**.
- Set **VPC endpoints** to **None**.
- Keep both **DNS hostnames** and **DNS resolution enabled**.

8. In the *Preview* panel on the right, confirm the settings you have configured.

- **VPC:** lab-vpc

VPC | us-east-1

VPC > Your VPCs > Create VPC

Resources to create [Info](#)
Create only the VPC resource or the VPC and other networking resources.

VPC only VPC and more

Name tag auto-generation [Info](#)
Enter a value for the Name tag. This value will be used to auto-generate Name tags for all resources in the VPC.

Auto-generate
lab

IPv4 CIDR block [Info](#)
Determine the starting IP and the size of your VPC using CIDR notation.

10.0.0.0/16 65,536 IPs

IPv6 CIDR block [Info](#)
 No IPv6 CIDR block
 Amazon-provided IPv6 CIDR block

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Step 2: create public subnet in another availability zone

The screenshots show the AWS VPC creation process for a public subnet in the us-east-1 region.

Screenshot 1: Create subnet wizard - Step 1

- VPC ID: vpc-01fe91de176d3df66 (lab-vpc)
- Associated VPC CIDRs: 10.0.0.0/16

Screenshot 2: Subnet settings - Step 2

- Subnet name: lab-subnet-public2
- Availability Zone: US East (N. Virginia) / us-east-1b
- IPv4 CIDR block: 10.0.2.0/24

Screenshot 3: Subnet settings - Step 3 (identical to Screenshot 2)

Step 3: create private subnet in the same availability zone but I forgot to take screenshots of doing it. In a nutshell choose VPC ID to be lab-vpc -> copy the name from step 2 change public to private and IPv4 is 10.0.3.0/24

Step 4: edit subnet association

I forgot to take screen shot of the edit phase but here is the result

The screenshot shows the AWS VPC Route Tables page. A green success message at the top states: "You have successfully updated subnet associations for rtb-045135d82e791dda9." The main table lists five route tables:

Name	Route table ID	Explicit subnet associations
-	rtb-045135d82e791dda9	2 subnets
-	rtb-09343738df8dd9b73	-
-	rtb-00cc13fc481bdd4f5	-
lab-rtb-public	rtb-09e70ac346899c9f3	subnet-064d6f56d335647b2 / lab-subnet-public1-us-east-1a
Work Public Route Table	rtb-031923cc7dea04ff	subnet-0154b66efb1cd08e4 / Work Public Subnet

Step 5: Same as step 4 but this time it is for lab-rtb public

The screenshot shows the AWS VPC Edit subnet associations page. The left pane displays lab instructions for "Lab 2 - Build your VPC and Launch a Web Server". The right pane shows the "Edit subnet associations" interface.

Selected subnets:

- subnet-064d6f56d335647b2 / lab-subnet-public1-us-east-1a
- subnet-07c0d5aca8cda65b9 / lab-subnet-public2

Save associations

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Bottom Taskbar: CloudShell, Feedback, Search, File Explorer, Task View, Taskbar Icons, Network, Battery, Volume, Language, Date and Time.

Step 6 : configure security group

The image consists of three vertically stacked screenshots from a Windows desktop environment, showing the configuration of a security group in AWS.

Screenshot 1 (Top): A screenshot of a browser window titled "ACFv2EN-55083" showing a configuration page for a security group. It includes fields for "Type: HTTP", "Source: Anywhere-IPv4", and "Description: Permit web requests". Below this, instructions state: "33. Scroll to the bottom of the page and choose Create security group". A note below says: "You will use this security group in the next task when launching an Amazon EC2 instance."

Screenshot 2 (Middle): A screenshot of the AWS VPC console showing the creation of a new security group named "Web Security Group". The "Description" field contains "Enable HTTP access". The "VPC Info" dropdown shows "vpc-01fe91de176d3df66". The "Inbound rules" section is visible at the bottom.

Screenshot 3 (Bottom): A screenshot of the AWS VPC console showing the newly created security group "Web Security Group". It displays an "Inbound rule 1" with the following details:

- Type: **HTTP**
- Protocol: **TCP**
- Port range: **80**
- Source type: **Anywhere-IPv4**
- Description - optional: **Permit web requests**
- Source IP: **0.0.0.0/0**

Feedback, Privacy, Terms, and Cookie preferences links are visible at the bottom of the AWS pages.

Step 7 : create an EC2 instance for this lab

The screenshot displays two browser windows side-by-side. The left window shows the AWS Cloud9 interface for a lab titled "ACFv2EN-55083" (Lab 2 - Build your VPC and Launch a Web Server). It includes a "Details" tab, an "Actions" dropdown, and a "Summary" panel containing instructions and a "Launch instance" button. The right window shows the AWS EC2 console with the URL "us-east-1.console.aws.amazon.com/ec2/home?region=us-east-1...". It features a "Name and tags" section where "Web Server 1" is entered, and an "Application and OS Images (Amazon Machine Image)" section listing "Amazon Linux", "macOS", and "Ubuntu". A search bar at the top of the EC2 page contains the placeholder "Search our full catalog including 1000s of application and OS images". Both windows show a Windows taskbar at the bottom with various icons.

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Lab 2 - Build your VPC and Launch a Web Server

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Actions

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and PHP libraries, and then it downloads and installs a PHP web application on the web server.

43. At the bottom of the **Summary** panel on the right side of the screen choose **Launch instance**

Launch instance

You will see a Success message.

Launch an instance | EC2 | us-east-1...

aws

Services Q N N. v vocabs/user2753113=104219428@st

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

Name Web Server 1

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

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Launch an instance | EC2 | us-east-1...

aws

Services Q N N. v vocabs/user2753113=104219428@st

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

Recents Quick Start

Amazon Linux macOS Ubuntu W

Browse more AMIs Including AMIs from AWS, Marketplace and the Community

Amazon Machine Image (AMI)

Amazon Linux 2023 AMI Free tier eligible

ami-03a6ea9938c858c (64-bit (x86)) / ami-03f6c2c562b3df715 (64-bit (Arm))
Virtualization: hvm ENA enabled: true Root device type: ebs

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Lab 2 - Build your VPC and Launch a Web Server

Details AWS Start Lab End Lab 0:44 Instructions

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and PHP libraries, and then it downloads and installs a PHP web application on the web server.

43. At the bottom of the **Summary** panel on the right side of the screen choose **Launch instance**

You will see a Success message.

Launch an instance | EC2 | us-east-1

Instance type

t2.micro Family: t2 1 vCPU 1 GiB Memory Free tier eligible
Current generation: true
On-Demand Windows base pricing: 0.0162 USD per Hour
On-Demand SUSE base pricing: 0.0116 USD per Hour
On-Demand RHEL base pricing: 0.0716 USD per Hour
On-Demand Linux base pricing: 0.0116 USD per Hour

All generations Compare instance types

Additional costs apply for AMIs with pre-installed software

Key pair (login) Info

You can use a key pair to securely connect to your instance. Ensure that you have access to the selected key pair before you launch the instance.

Key pair name - required vockey Create new

VPC - required Info

vpc-01fe91de176d3df66 (lab-vpc) 10.0.0.0/16

Subnet Info

subnet-07c0d5aca8cda65b9 lab-subnet-public2 VPC: vpc-01fe91de176d3df66 Owner: 212400520582 Availability Zone: us-east-1b IP addresses available: 251 CIDR: 10.0.2.0/24

Create new subnet

Auto-assign public IP Info

Enable

Firewall (security groups) Info

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.

Create security group Select existing security group

Common security groups Info

Select security groups

Web Security Group sg-0e738c411776f4bf3

Compare security group rules

Feedback

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The screenshot shows two windows side-by-side. The left window is a web browser displaying an AWS Academy lab titled "ACFv2EN-55083" with the sub-section "Lab 2 - Build your VPC and Launch a Web Server". It includes tabs for "Details", "AWS", "Start Lab", "End Lab", and "Instructions". Below the tabs, there's a file selection interface with "Files" and "README" selected. A dropdown menu shows "EN-US". The main content area contains text about installing Apache, PHP, and a web application. A step 43 is highlighted: "At the bottom of the **Summary** panel on the right side of the screen choose **Launch instance**". Below this, a message says "You will see a Success message." The right window is the AWS CloudShell interface, showing a terminal session titled "Launch an instance | EC2 | us-east-1". It displays a shell script for launching an instance, including commands like `dnf install -y httpd wget php mariadb105-server`, `wget https://aws-tc-largeobjects.s3.us-west-2.amazonaws.com/CUR-TF-100-ACCLFO-2/2-lab2-vpc/s3/lab-app.zip`, and `service httpd start`. There's also a note about base64 encoding.

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Lab 2 - Build your VPC and Launch a Web Server

Details AWS Start Lab End Lab 0:44 Instructions

Actions

Files README Terminal Source EN-US

and PHP libraries, and then it downloads and installs a PHP web application on the web server.

43. At the bottom of the **Summary** panel on the right side of the screen choose **Launch instance**

You will see a Success message.

User data (optional) info
Upload a file with your user data or enter it in the field.
Choose file

```
#!/bin/bash
# Install Apache Web Server and PHP
dnf install -y httpd wget php mariadb105-server
# Download Lab files
wget https://aws-tc-largeobjects.s3.us-west-2.amazonaws.com/CUR-TF-100-ACCLFO-2/2-lab2-vpc/s3/lab-app.zip
unzip lab-app.zip -d /var/www/html/
# Turn on web server
chkconfig httpd on
service httpd start
```

User data has already been base64 encoded

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Instances | EC2 | us-east-1 Instances (2) Info

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Ava
Web Server 1	i-0b2e1256cd3a06974	Running	t2.micro	2/2 checks passed	No alarms	us-e
Bastion Host	i-0b71bd7e88c42a37c	Running	t2.micro	2/2 checks passed	No alarms	us-e

Select an instance

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Finished Lab:

The screenshot shows a web browser with two tabs. The left tab is titled "ACFv2EN-55083" and displays the results of "Lab 2 - Build your VPC and Launch a Web Server". It includes a navigation bar with "Details", "AWS", "Start Lab", "End Lab" (disabled), "0:38", and "Instructions". Below this is an "Actions" dropdown with "Files", "README", "Terminal", and "Source". A dropdown menu shows "EN-US". A note says "You should see a web page displaying the AWS logo and instance meta-data values." Another note describes the deployed architecture. On the right, there's a diagram of the VPC architecture and a table of instance metadata. The right tab shows the AWS logo and a table of instance metadata with rows for InstanceId and Availability Zone.

Meta-Data	Value
InstanceId	i-0b2e1256cd3a06974
Availability Zone	us-east-1b

Current CPU Load: 2%

The screenshot shows the AWS Academy interface. The left sidebar has links for Account, Dashboard, Courses, Calendar, Inbox, History, Help, and a back arrow. The main area shows the navigation path: "ACFv2EN-... > Modules > Module 5 ... > Lab 2 - Build your VPC and Launch a Web Server". A modal window titled "End Lab" is open, showing details: Region: us-east-1, Lab ID: arn:aws:cloudformation:us-east-1:212400520582:stack/c92525a206149014815949t1w212400520582/62514a90-59c8-11ee-9b17-12168ac5a8eb, Creation Time: 2023-09-22T21:19:27-0700, and a message: "You may close this message box now. Lab resources are terminating ...". Below the modal, a note says "In this lab, you will use Amazon Virtual Private Cloud (VPC) to create a VPC and add a". At the bottom, there are "Previous" and "Next" buttons, and a taskbar with various icons.