

Swinburne University of Technology

COS20019 Cloud Computing Architecture

Lab 2: Build a VPC and launch a Web Server

Sunday 24th September, 2023

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TASK 1: CREATE YOUR VPC

5. Search for and choose VPC to open the VPC console.

The image shows two side-by-side screenshots. On the left is a screenshot of a lab instructions page titled "ACFv2EN-46508" for "Lab 2 - Build your VPC and Launch a Web Server". It contains steps 5 through 7 for creating a VPC. Step 5 instructs to search for "VPC" in the AWS Services search bar. Step 6 says to begin creating a VPC by choosing the "Create VPC" button. Step 7 says to configure VPC details in the "VPC settings" panel. Step 5 also includes a note about selecting the "us-east-1" region. Step 6 includes a note about choosing the "Launch VPC Wizard" button if the "Create VPC" button is not visible. On the right is a screenshot of the AWS search interface. The search bar at the top has "VPC" typed into it. Below the search bar, the "Services" tab is selected, showing a list of services. The first service in the list is "VPC", which is highlighted with a star icon and described as "Isolated Cloud Resources". Other services listed include AWS Firewall Manager, Detective, Managed Services, Route 53 Resolver, Lightsail, Batch, Amazon WorkMail, and FSx.

In this task, you will use the **VPC and more** option in the VPC console to create multiple resources, including a VPC, an *Internet Gateway*, a *public subnet* and a *private subnet* in a single Availability Zone, two *route tables*, and a *NAT Gateway*.

5. In the search box to the right of **Services**, search for and choose **VPC** to open the VPC console.

6. Begin creating a VPC.

- In the top right of the screen, verify that **N. Virginia (us-east-1)** is the region.
- Choose the **VPC dashboard** link which is also towards the top left of the console.
- Next, choose **Create VPC**.

Note: If you do not see a button with that name, choose the Launch VPC Wizard button instead.

7. Configure the VPC details in the **VPC settings** panel

◀ Previous Next ▶

VPC

Services (12) Features (57) Resources (New) Documentation (12,360) Knowledge Articles (20) Marketplace

VPC Isolated Cloud Resources

AWS Firewall Manager Central management of firewall rules

Detective Investigate and Analyze potential security issues

Managed Services IT operations management for AWS

Route 53 Resolver Resolve DNS queries in your Amazon VPC and on-premises network.

Lightsail Launch and Manage Virtual Private Servers

Batch Fully managed batch processing at any scale

Amazon WorkMail Secure Email and Calendering Service

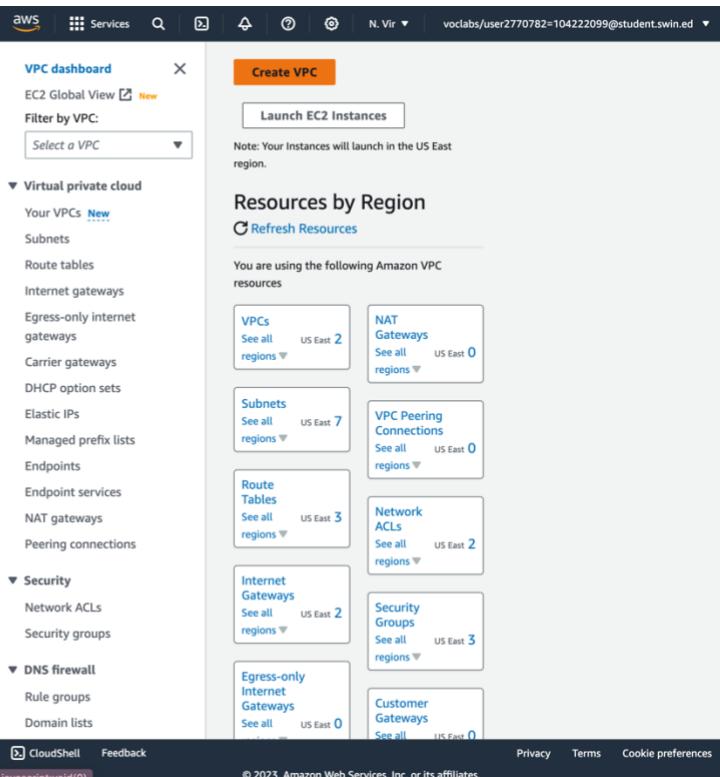
FSx Fully managed third-party file systems optimized for a variety of workloads

CloudShell Feedback

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Searching for VPC

6. Begin creating a VPC.



The screenshot shows the AWS VPC dashboard. At the top right, there is a large orange "Create VPC" button. Below it, a "Launch EC2 Instances" button is visible. A note states: "Note: Your Instances will launch in the US East region." On the left, a sidebar lists various VPC-related resources: VPCs, Subnets, Route Tables, Internet Gateways, Egress-only Internet Gateways, Carrier Gateways, DHCP Option Sets, Elastic IPs, Managed Prefix Lists, Endpoints, Endpoint Services, NAT Gateways, and Peering Connections. Under Security, it lists Network ACLs and Security Groups. Under DNS Firewall, it lists Rule Groups and Domain Lists. The main area displays resource counts for each category, such as 2 VPCs and 0 NAT Gateways.

ACFv2EN-46508
Lab 2 - Build your VPC and Launch a Web Server

Details AWS Start Lab End Lab 1:22 Instructions

Actions Files README Terminal Source EN-US

5. In the search box to the right of **Services**, search for and choose **VPC** to open the VPC console.

6. **Begin creating a VPC.**

- In the top right of the screen, verify that **N. Virginia (us-east-1)** is the region.
- Choose the **VPC dashboard** link which is also towards the top left of the console.
- Next, choose **Create VPC**.

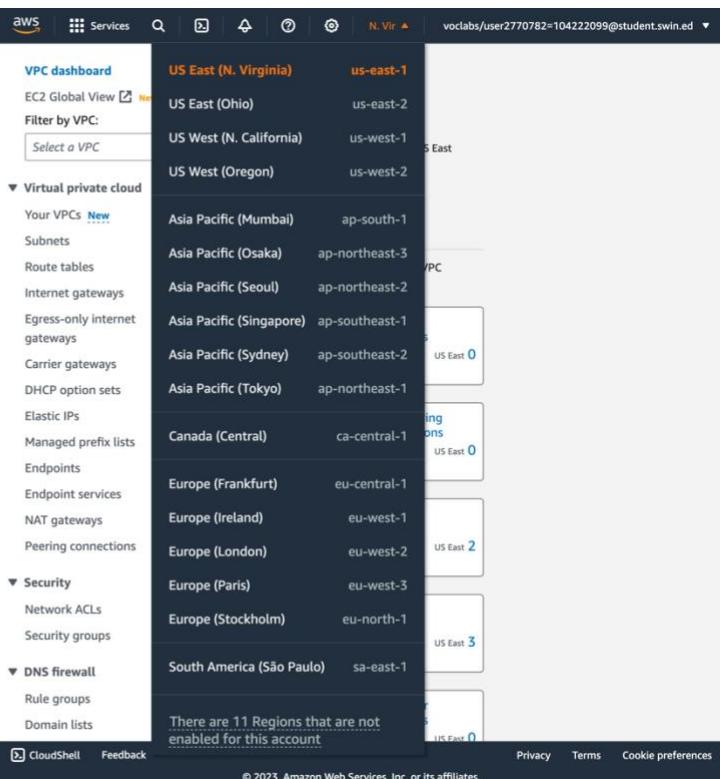
Note: If you do not see a button with that name, choose the Launch VPC Wizard button instead.

7. Configure the VPC details in the **VPC settings** panel on the left:

- Choose **VPC and more**.
- Under **Name tag auto-generation**, keep **Auto-generate** selected, however change the value

◀ Previous Next ▶

VPC dashboard



The screenshot shows the AWS VPC dashboard with a note at the bottom stating: "There are 11 Regions that are not enabled for this account". The rest of the interface is identical to the previous screenshot, showing the "Create VPC" button and the list of VPC-related resources.

ACFv2EN-46508
Lab 2 - Build your VPC and Launch a Web Server

Details AWS Start Lab End Lab 1:23 Instructions

Actions Files README Terminal Source EN-US

5. In the search box to the right of **Services**, search for and choose **VPC** to open the VPC console.

6. **Begin creating a VPC.**

- In the top right of the screen, verify that **N. Virginia (us-east-1)** is the region.
- Choose the **VPC dashboard** link which is also towards the top left of the console.
- Next, choose **Create VPC**.

Note: If you do not see a button with that name, choose the Launch VPC Wizard button instead.

7. Configure the VPC details in the **VPC settings** panel on the left:

- Choose **VPC and more**.
- Under **Name tag auto-generation**, keep **Auto-generate** selected, however change the value

◀ Previous Next ▶

N. Virginia (us-east-1) is the region.

7. Configure the VPC details in the **VPC settings** panel on the left:

The screenshot shows two side-by-side browser windows. The left window is the AWS Cloud9 interface for Lab 2, showing steps 5 and 6. Step 5 instructs to search for 'VPC' in the Services menu. Step 6 begins creating a VPC, showing the user has selected the 'VPC only' option and is about to click 'Create VPC'. The right window is the AWS VPC 'Create VPC' settings page. It shows the 'VPC and more' option selected, and under 'Name tag auto-generation', the 'Auto-generate' checkbox is checked with the value 'project'. The 'IPv4 CIDR block' is set to '10.0.0.0/16'. The 'Tenancy' dropdown is set to 'Default'. The 'Number of Availability Zones (AZs)' dropdown is set to '1'. The preview pane shows a VPC named 'project-vpc'.

VPC settings

- Choose **VPC and more**.
- Under **Name tag auto-generation**, keep **Auto-generate** selected, however change the value from *project* to *lab*.
- Keep the **IPv4 CIDR block** set to **10.0.0.0/16**

The screenshot shows the AWS Cloud9 IDE interface for a lab titled "ACFv2EN-46508" and "Lab 2 - Build your VPC and Launch a Web Server".

Left pane (Actions):

- Details: ACFv2EN-46508
- AWS
- Start Lab
- End Lab
- 1:18
- Instructions
- Actions
- Files (unchecked)
- README (checked)
- Terminal (checked)
- Source (unchecked)

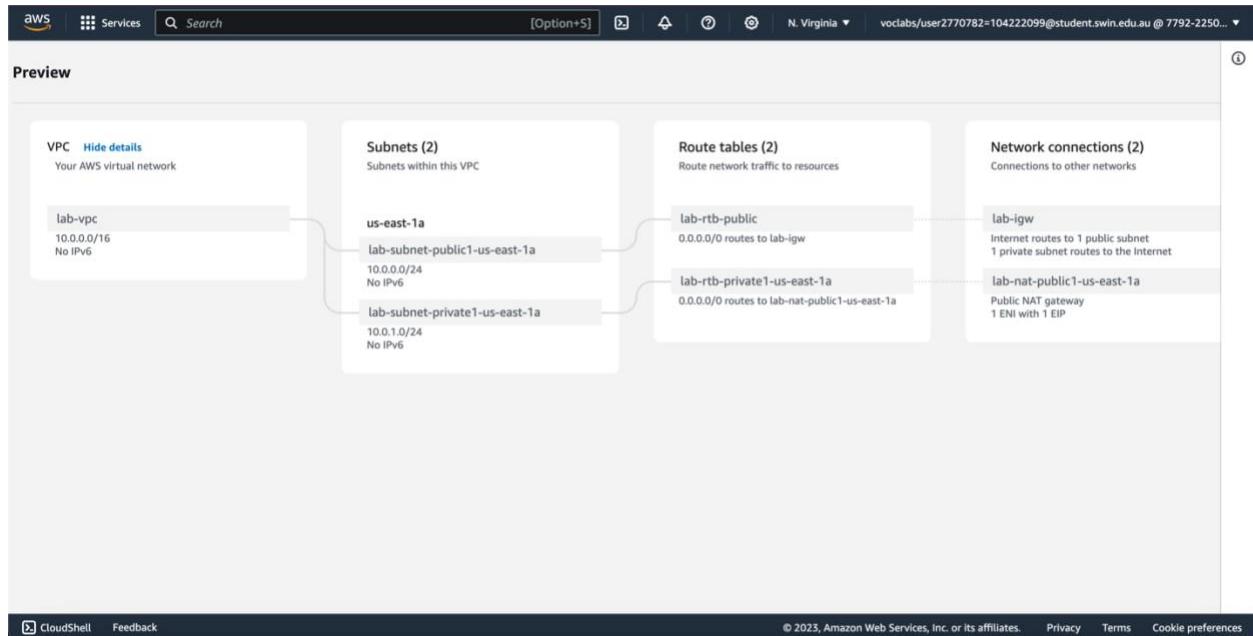
Right pane (Customize AZs):

- Number of public subnets:** Info. Set to 1.
- Number of private subnets:** Info. Set to 2.
- Customize subnets CIDR blocks:**
 - Public subnet CIDR block in us-east-1a: 10.0.0.0/16 (256 IPs)
 - Private subnet CIDR block in us-east-1a: 10.0.1.0/24 (256 IPs)
- NAT gateways (\$):** Info. Set to 1 per AZ.
- VPC endpoints:** Info. Set to S3 Gateway.
- DNS options:**
 - Enable DNS hostnames (checked)
 - Enable DNS resolution (checked)

Preview: Shows the VPC named "lab-vpc".

- For **Number of Availability Zones**, choose **1**.
- For **Number of public subnets**, keep the **1** setting.
- For **Number of private subnets**, keep the **1** setting.
- Expand the **Customize subnets CIDR blocks** section
 - Change **Public subnet CIDR block in us-east-1a** to **10.0.0.0/24**
 - Change **Private subnet CIDR block in 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. Confirm the settings you have configured.



9. Choose “Create VPC”. The VPC resources are created.

The screenshot shows the AWS VPC Wizard at step 14, titled "Lab 2 - Build your VPC and Launch a Web Server". The "Create VPC" button is highlighted. The "Preview" tab is selected, displaying the configuration details for the VPC:

- Number of private subnets:** 1
- 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:** 10.0.1.0/24 (256 IPs)
- NAT gateways (\$):** 1 per AZ
- VPC endpoints:** S3 Gateway
- DNS options:** Enable DNS hostnames, Enable DNS resolution

At the bottom, there are "Cancel" and "Create VPC" buttons, along with navigation links for "Previous" and "Next".

AWS Services N. voclabs/user2770782=104222099@student.s

VPC > Your VPCs > Create VPC > Create VPC resources

Create VPC workflow

Success

▼ Details

- ✓ Create VPC: [vpc-07ea577f5b8e9ce68](#)
- ✓ Enable DNS hostnames
- ✓ Enable DNS resolution
- ✓ Verifying VPC creation: [vpc-07ea577f5b8e9ce68](#)
- ✓ Create subnet: [subnet-098d2967ed874b042](#)
- ✓ Create subnet: [subnet-0a8f616bc3c2a8d3d](#)
- ✓ Create internet gateway: [igw-00ed18ff7454248ce](#)
- ✓ Attach internet gateway to the VPC
- ✓ Create route table: [rtb-024d4506cdb09c02e](#)
- ✓ Create route
- ✓ Associate route table
- ✓ Allocate elastic IP: [eipalloc-0752d03778027ec52](#)
- ✓ Create NAT gateway: [nat-0b6205f02e2c81ece](#)
- ✓ Wait for NAT Gateways to activate
- ✓ Create route table: [rtb-0ae9b750c7b06900c](#)
- ✓ Create route
- ✓ Associate route table
- ✓ Verifying route table creation

[View VPC](#)

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10. View VPC.

ACFv2EN-46508
Lab 2 - Build your VPC and Launch a Web Server

Details AWS Start Lab End Lab 1:11 Instructions Actions ▾

EN-US

Please wait until *all* the resources are created before proceeding to the next step.

10. Once it is complete, choose [View VPC](#).

The wizard has provisioned a VPC with a public subnet and a private subnet in one Availability Zone with route tables for each subnet. It also created an Internet Gateway and a NAT Gateway.

To view the settings of these resources, browse through the VPC console links that display the resource details. For example, choose **Subnets** to view the subnet details and choose **Route tables** to view the route table details. The diagram below summarizes the VPC resources you have just created and how they are configured.

[Previous](#) [Next ▶](#)

VPC dashboard EC2 Global View New Filter by VPC: Select a VPC

vpc-07ea577f5b8e9ce68 / lab-vpc

Actions ▾

Virtual private cloud

Your VPCs New Subnets Route tables Internet gateways Egress-only internet gateways Carrier gateways DHCP option sets Elastic IPs Managed prefix lists Endpoints Endpoint services NAT gateways Peering connections Security Network ACLs Security groups DNS firewall Rule groups Domain lists

Details Info

VPC ID	vpc-07ea577f5b8e9ce68	State	Available
Tenancy	Default	DHCP option set	dopt-0cea04d858bbff2bf
Default VPC No		IPv4 CIDR	10.0.0.0/16
Network Address Usage metrics	Disabled	Route 53 Resolver DNS Firewall rule groups	Failed to load rule groups
DNS hostnames	Enabled	DNS resolution	Enabled
Main route table	rtb-0c146424c441a4ff4	Main network ACL	acl-06f2af1e297412d71
IPv6 pool	-	IPv6 CIDR (Network border group)	-
Owner ID	77922503403	Owner ID	-

Resource map New CIDs | Flow logs | Tags

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ACFv2EN-46508
Lab 2 - Build your VPC and Launch a Web Server

Details AWS Start Lab End Lab 1:07 Instructions Actions ▾

EN-US

The wizard has provisioned a VPC with a public subnet and a private subnet in one Availability Zone with route tables for each subnet. It also created an Internet Gateway and a NAT Gateway.

To view the settings of these resources, browse through the VPC console links that display the resource details. For example, choose **Subnets** to view the subnet details and choose **Route tables** to view the route table details. The diagram below summarizes the VPC resources you have just created and how they are configured.

An Internet gateway is a VPC resource that allows communication between EC2 instances in your VPC and the public internet.

[Previous](#) [Next ▶](#)

VPC dashboard EC2 Global View New Filter by VPC: Select a VPC

Subnets (9) Info Create subnet

Name	Subnet ID	State
Work Public Subnet	subnet-057527b3e0cdf1670	Available
lab-subnet-public1-us-east-1a	subnet-098d2967ed874b042	Available
lab-subnet-private1-us-east-1a	subnet-0a8f616bc3c2a8d3d	Available
-	subnet-059054c41d6bbf515	Available
-	subnet-042b25433937b202c	Available
-	subnet-049dd5136099b8b91	Available
-	subnet-07b66cf0119f1f3a1	Available
-	subnet-0865ca2f3a0533d0d	Available

Select a subnet

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Subnets tab

ACFv2EN-46508
Lab 2 - Build your VPC and Launch a Web Server

Details AWS Start Lab End Lab 1:06
Instructions Actions EN-US

The wizard has provisioned a VPC with a public subnet and a private subnet in one Availability Zone with route tables for each subnet. It also creates an Internet Gateway and a NAT Gateway.

To view the settings of these resources, browse through the VPC console links that display the resource details. For example, choose **Subnets** to view the subnet details and choose **Route tables** to view the route table details. The diagram below summarizes the VPC resources you have just created and how they are configured.

An *Internet gateway* is a VPC resource that allows communication between EC2 instances in your VPC and the public internet.

VPC dashboard EC2 Global View New Filter by VPC: Select a VPC

Virtual private cloud

- Your VPCs New
- Subnets**
- Route tables
- Internet gateways
- Egress-only internet gateways
- Carrier gateways
- DHCP option sets
- Elastic IPs
- Managed prefix lists
- Endpoints
- Endpoint services
- NAT gateways
- Peering connections

Security

- Network ACLs
- Security groups

DNS firewall

- Rule groups
- Domain lists

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Subnets tab

ACFv2EN-46508
Lab 2 - Build your VPC and Launch a Web Server

Details AWS Start Lab End Lab 1:06
Instructions Actions EN-US

The wizard has provisioned a VPC with a public subnet and a private subnet in one Availability Zone with route tables for each subnet. It also creates an Internet Gateway and a NAT Gateway.

To view the settings of these resources, browse through the VPC console links that display the resource details. For example, choose **Subnets** to view the subnet details and choose **Route tables** to view the route table details. The diagram below summarizes the VPC resources you have just created and how they are configured.

An *Internet gateway* is a VPC resource that allows communication between EC2 instances in your VPC and the public internet.

VPC dashboard EC2 Global View New Filter by VPC: Select a VPC

Virtual private cloud

- Your VPCs New
- Subnets**
- Route tables
- Internet gateways
- Egress-only internet gateways
- Carrier gateways
- DHCP option sets
- Elastic IPs
- Managed prefix lists
- Endpoints
- Endpoint services
- NAT gateways
- Peering connections

Security

- Network ACLs
- Security groups

DNS firewall

- Rule groups
- Domain lists

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Subnets tab

ACFv2EN-46508

Lab 2 - Build your VPC and Launch a Web Server

Details AWS Start Lab End Lab 1:06

Instructions Actions

Files README Terminal Source

EN-US

The wizard has provisioned a VPC with a public subnet and a private subnet in one Availability zone with route tables for each subnet. It also creates Internet Gateway and a NAT Gateway.

To view the settings of these resources, browse through the VPC console links that display the resource details. For example, choose **Subnets** to view the subnet details and choose **Route tables** to view the route table details. The diagram below summarizes the VPC resources you have just created and how they are configured.

An Internet gateway is a VPC resource that allows communication between EC2 instances in your VPC and the public internet.

VPC dashboard EC2 Global View New Filter by VPC: Select a VPC

Virtual private cloud Your VPCs New Subnets

- Route tables
- Internet gateways
- Egress-only internet gateways
- Carrier gateways
- DHCP option sets
- Elastic IPs
- Managed prefix lists
- Endpoints
- Endpoint services
- NAT gateways
- Peering connections

Security Network ACLs Security groups

DNS firewall Rule groups Domain lists

CloudShell Feedback

Find resources by attribute or tag

Network border group	Route table	Network ACL
us-east-1	rtb-024d4506cd809c02e lab-r...	acl-062af1e297412d71
us-east-1	rtb-0ae9b750c7b06900c lab-r...	acl-062af1e297412d71
us-east-1	rtb-00931c151079e3901 Wor...	acl-023f9154dbece4af
us-east-1	rtb-0a3e7d57328e2c8e7	acl-0e03ae7587a6f5a49

subnet-059054c41d6bbf515

Details Flow logs Route table Network ACL CIDR reservations

Details

Subnet ID: subnet-059054c41d6bbf515 Subnet ARN: arn:aws:ec2:us-east-1:779222503403:subnet/subnet-059054c41d6bbf515 Available IPv4 addresses: 4091 IPv6 CIDR:

Subnets tab

ACFv2EN-46508

Lab 2 - Build your VPC and Launch a Web Server

Details AWS Start Lab End Lab 1:06

Instructions Actions

Files README Terminal Source

EN-US

The wizard has provisioned a VPC with a public subnet and a private subnet in one Availability Zone with route tables for each subnet. It also creates an Internet Gateway and a NAT Gateway.

To view the settings of these resources, browse through the VPC console links that display the resource details. For example, choose **Subnets** to view the subnet details and choose **Route tables** to view the route table details. The diagram below summarizes the VPC resources you have just created and how they are configured.

An Internet gateway is a VPC resource that allows communication between EC2 instances in your VPC and the public internet.

VPC dashboard EC2 Global View Filter by VPC: Select a VPC

Virtual private cloud Your VPCs Subnets Route tables Internet gateways Egress-only internet gateways Carrier gateways DHCP option sets Elastic IPs Managed prefix lists Endpoints Endpoint services NAT gateways Peering connections

Security Network ACLs Security groups

DNS firewall Rule groups Domain lists

Find resources by attribute or tag

Default subnet	Auto-assign public IPv4 address	Auto-assign customer-owned IPv4 address
No	No	No
No	No	No
No	Yes	No
Yes	Yes	No

subnet-059054c41d6bbf515

Details Flow logs Route table Network ACL CIDR reservations

Details

Subnet ID	subnet-059054c41d6bbf515
Subnet ARN	arn:aws:ec2:us-east-1:779222503403:subnet/subnet-059054c41d6bbf515
Available IPv4 addresses	4091
IPv6 CIDR	

Subnets tab

The screenshot shows two side-by-side views of the AWS VPC console. On the left is a wizard titled 'Lab 2 - Build your VPC and Launch a Web Server' which has provisioned a VPC with one public subnet and one private subnet across two availability zones. On the right is the 'Subnets' tab of the VPC dashboard, listing eight subnets. Each subnet entry includes fields for Customer-owned IPv4 pool, Auto-assign IPv6 address, and Owner ID. Below the table, a specific subnet ('subnet-059054c41d6bbf515') is selected, and its detailed configuration is shown in a modal window.

Customer-owned IPv4 pool	Auto-assign IPv6 address	Owner ID
-	No	779222503403

subnet-059054c41d6bbf515

Details	Flow logs	Route table	Network ACL	CIDR reservations
Details				
Subnet ID subnet-059054c41d6bbf515	Subnet ARN arn:aws:ec2:us-east-1:779222503403:subnet/subnet-059054c41d6bbf515			
Available IPv4 addresses 4091	IPv6 CIDR			

Subnets tab

ACFv2EN-46508
Lab 2 - Build your VPC and Launch a Web Server

Details AWS Start Lab End Lab 1:05
Instructions Actions EN-US

The wizard has provisioned a VPC with a public subnet and a private subnet in one Availability Zone with route tables for each subnet. It also creates an Internet Gateway and a NAT Gateway.

To view the settings of these resources, browse through the VPC console links that display the resource details. For example, choose **Subnets** to view the subnet details and choose **Route tables** to view the route table details. The diagram below summarizes the VPC resources you have just created and how they are configured.

An *Internet gateway* is a VPC resource that allows communication between EC2 instances in your VPC and the public internet.

VPC dashboard EC2 Global View New Filter by VPC: Select a VPC

Route tables

Virtual private cloud Your VPCs New Subnets Route tables Internet gateways Egress-only internet gateways Carrier gateways DHCP option sets Elastic IPs Managed prefix lists Endpoints Endpoint services NAT gateways Peering connections Security Network ACLs Security groups DNS firewall Rule groups Domain lists

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Route tables tab

ACFv2EN-46508
Lab 2 - Build your VPC and Launch a Web Server

Details AWS Start Lab End Lab 1:04
Instructions Actions EN-US

The wizard has provisioned a VPC with a public subnet and a private subnet in one Availability Zone with route tables for each subnet. It also creates an Internet Gateway and a NAT Gateway.

To view the settings of these resources, browse through the VPC console links that display the resource details. For example, choose **Subnets** to view the subnet details and choose **Route tables** to view the route table details. The diagram below summarizes the VPC resources you have just created and how they are configured.

An *Internet gateway* is a VPC resource that allows communication between EC2 instances in your VPC and the public internet.

VPC dashboard EC2 Global View New Filter by VPC: Select a VPC

Route tables

Virtual private cloud Your VPCs New Subnets Route tables Internet gateways Egress-only internet gateways Carrier gateways DHCP option sets Elastic IPs Managed prefix lists Endpoints Endpoint services NAT gateways Peering connections Security Network ACLs Security groups DNS firewall Rule groups Domain lists

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Route tables tab

The screenshot shows the AWS VPC dashboard with the Subnets page open. The left sidebar lists various VPC-related services and security options. The main content area displays a table of subnets with columns for Name, Subnet ID, and Actions. A modal window is open for the subnet named 'lab-subnet-public1-us-east-1a', showing its configuration details.

Name	Subnet ID
lab-subnet-public1-us-east-1a	subnet-098d2967ed874b042
lab-subnet-private1-us-east-1a	subnet-0a8f616bc3c2a8d3d
Work Public Subnet	subnet-057527b3e0cdf1670
-	subnet-059054c41d6bbf515
-	subnet-042b25433937b202c
-	subnet-049dd5136099b8b91
-	subnet-07b66cf0119f1f3a1
-	subnet-0865ca2f3a0533d0d

Subnet Details (Modal View):

State	IPv4 CIDR
Available	10.0.0.0/24
Availability Zone	Availability Zone ID
us-east-1a	use1-az1
Route table	Network ACL
rtb-024d4506cdb09c02e lab-rtb-public	acl-06f2af1e297412d71
Auto-assign IPv6 address	Auto-assign customer-owned IPv4 address
No	No

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The lab-subnet-public1-us-east-1a public subnet has a CIDR of 10.0.0.0/24, which means that it contains all IP addresses starting with 10.0.0.x. The fact the route table associated with this public subnet

routes 0.0.0.0/0 network traffic to the internet gateway is what makes it a public subnet.

The screenshot shows the AWS VPC dashboard with the 'Subnets' section selected. A table lists nine subnets, with one being selected:

	Name	Subnet ID
<input type="checkbox"/>	lab-subnet-public1-us-east-1a	subnet-098d2967ed874b042
<input checked="" type="checkbox"/>	lab-subnet-private1-us-east-1a	subnet-0a8f616bc3c2a8d3d
<input type="checkbox"/>	Work Public Subnet	subnet-057527b3e0cdf1670
<input type="checkbox"/>	-	subnet-059054c41d6bbf515
<input type="checkbox"/>	-	subnet-042b25433937b202c
<input type="checkbox"/>	-	subnet-049dd5136099b8b91
<input type="checkbox"/>	-	subnet-07b66cf0119f1f3a1
<input type="checkbox"/>	-	subnet-0865ca2f3a0533d0d

A detailed view of the selected subnet ('lab-subnet-private1-us-east-1a') is shown on the right, with the following details:

- State:** Available
- IPv4 CIDR:** 10.0.1.0/24
- Availability Zone:** us-east-1a
- Availability Zone ID:** use1-az1
- Route table:** rtb-0ae9b750c7b06900c | lab-rtb-private1-us-east-1a
- Network ACL:** acl-06f2af1e297412d71
- Auto-assign customer-owned IPv4 address:** No

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The lab-subnet-private1-us-east-1a private subnet has a CIDR of 10.0.1.0/24, which means that it contains all IP addresses starting with 10.0.1.x.

TASK 2: CREATE ADDITIONAL SUBNETS

12. Create a second subnet.

Details AWS Start Lab End Lab 1:01 Instructions Actions ▾

EN-US

deploying solutions that provide *High Availability*.

After creating a VPC as you have already done, you can still configure it further, for example, by adding more **subnets**. Each subnet you create resides entirely within one Availability Zone.

11. In the left navigation pane, choose **Subnets**.
First, you will [create a second *public* subnet](#).

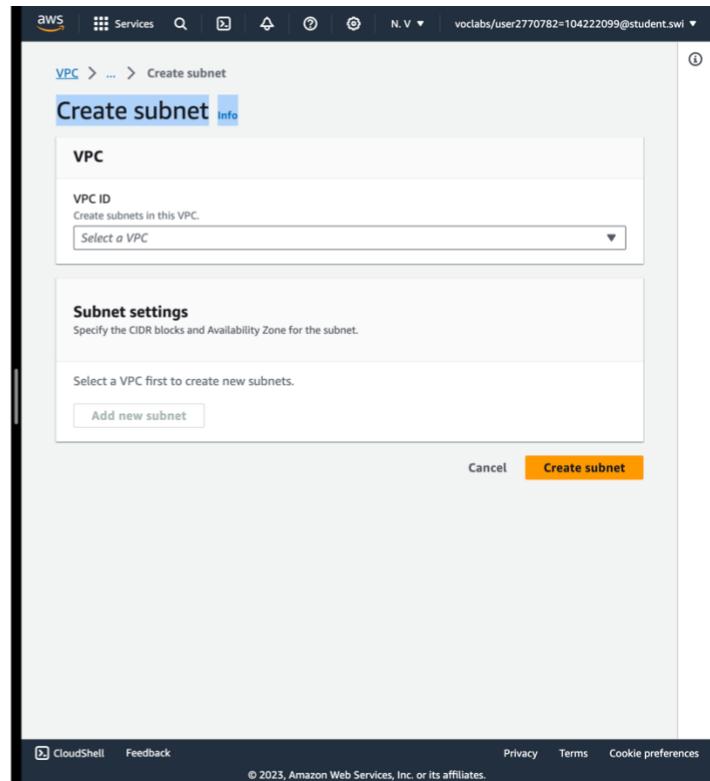
12. Choose **Create subnet**, then configure:

- **VPC ID:** lab-vpc (select from the menu).
- **Subnet name:** lab-subnet-public2
- **Availability Zone:** Select the *second* Availability Zone (for example, us-east-1b)
- **IPv4 CIDR block:** 10.0.2.0/24

The subnet will have all IP addresses starting with **10.0.2.x**.

13. Choose **Create subnet**

◀ Previous Next ▶



12. Choose **Create subnet**, then configure:

- o **VPC ID:** lab-vpc (Select from the menu).
- o **Subnet name:** lab-subnet-public2
- o **Availability Zone:** Select the second Availability Zone (for example, us-east-1b)
- o **IPv4 CIDR block:** 10.0.2.0/24

The subnet will have all IP addresses starting with **10.0.2.x**.

VPC

VPC ID
Create subnets in this VPC.
vpc-07ea577f5bb8e9ce68 (lab-vpc)

Associated VPC CIDRs
IPv4 CIDRs
10.0.0.0/16

Subnet settings
Specify the CIDR blocks and Availability Zone for the subnet.

Subnet 1 of 1

Subnet name
Create a tag with a key of 'Name' and a value that you specify.
lab-subnet-public2
The name can be up to 256 characters long.

Availability Zone Info
Choose the zone in which your subnet will reside, or let Amazon choose one for you.
US East (N. Virginia) / us-east-1b

IPv4 CIDR block Info
10.0.2.0/24

Tags - optional
Key **Name** Value - optional **lab-subnet-public2**

CloudShell **Feedback** **Privacy** **Terms** **Cookie preferences**

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The screenshot shows a user interface for managing subnets. At the top, there are several icons: a bell, a question mark, a gear, and a dropdown menu labeled "N. V". To the right of these is the user information "voclabs/user2770782=104222099@student.swi". Below the header, a green notification bar displays the message "You have successfully created 1 subnet: subnet-078274d1060d1182c" with a checkmark icon and a close button (X).

The main area is titled "Subnets (1)" with an "Info" link, a refresh button, and an "Actions" dropdown. An orange "Create subnet" button is visible. A search bar contains the placeholder "Find resources by attribute or tag". Below the search bar is a filter bar with the text "Subnet ID = subnet-078274d1060d1182c" and a clear filters button.

The subnet list table has columns for "Name" and "Subnet ID". It shows one entry: "lab-subnet-public2" with the ID "subnet-078274d1060d1182c". The table includes sorting and filtering options, and navigation buttons for pages 1, 2, and 3.

At the bottom, there is a section titled "Select a subnet" with three small square icons. The text below states: "The **second public subnet** was created (*lab-subnet-public2*). The subnet will have all IP addresses starting with **10.0.2.x**".

The **second public subnet** was created (*lab-subnet-public2*). The subnet will have all IP addresses starting with **10.0.2.x**.

The screenshot shows a user interface for managing subnets. At the top, there are several icons: a bell, a question mark, a gear, and a dropdown menu labeled "N. V". To the right of the icons is the user information "voclabs/user2770782=104222099@student.swi". Below the header, a green success message box contains the text "✓ You have successfully created 1 subnet: subnet-034c70450d6e46ce4" with a close button "X".

The main area is titled "Subnets (1)" with an "Info" link, a refresh icon, and an "Actions" dropdown. An orange "Create subnet" button is visible. A search bar with the placeholder "Find resources by attribute or tag" is present. A filter bar shows "Subnet ID = subnet-034c70450d6e46ce4" with a clear button "X" and a "Clear filters" button.

The table below lists one subnet:

<input type="checkbox"/>	Name	Subnet ID
<input type="checkbox"/>	lab-subnet-private2	subnet-034c70450d6e46ce4

At the bottom, there is a "Select a subnet" section with three small square icons. The text "The **second private subnet** was created (*lab-subnet-private2*). The subnet will have all IP addresses starting with **10.0.3.x**." is displayed.

16. Choose “Route tables”

Details AWS Start Lab End Lab 0:55 Instructions Actions ▾

EN-US

that are used to determine where network traffic is directed. Each subnet in a VPC must be associated with a route table; the route table controls routing for the subnet.

16. In the left navigation pane, choose **Route tables**.

17. Select the **lab-rtb-private1-us-east-1a** route table.

18. In the lower pane, choose the **Routes** tab.

Note that **Destination 0.0.0.0/0** is set to **Target nat-xxxxxxxx**. This means that traffic destined for the internet (0.0.0.0/0) will be sent to the NAT Gateway. The NAT Gateway will then forward the traffic to the internet.

This route table is therefore being used to route traffic from private subnets.

19. Choose the **Subnet associations** tab.

◀ Previous Next ▶

The screenshot shows the AWS VPC Route Tables page. The left sidebar lists various VPC components: Your VPCs (New), Subnets, Route tables (selected), Internet gateways, Egress-only Internet gateways, Carrier gateways, DHCP option sets, Elastic IPs, Managed prefix lists, Endpoints, Endpoint services, NAT gateways, and Peering connections. The main content area displays the 'Route tables (1/6)' section. A table lists route tables with columns for Name, Route table ID, and Explicit subnet. The 'lab-rtb-private1-us-east-1a' table is selected, showing its details. Below it, the 'Routes (2)' tab is selected, showing a table with columns for Destination, Target, Status, and Propagated. One route entry is present: Destination 0.0.0.0/0, Target nat-0b6205f02e2c81ec, Status Active, Propagated No.

18. Note that Destination **0.0.0.0/0** is set to Target ***nat-xxxxxxxx***. This means that traffic destined for the internet (0.0.0.0/0) will be sent to the **NAT Gateway**. The NAT Gateway will then forward the traffic to the internet.

Route tables (1/6) [Info](#)

[Actions](#) [Create route table](#)

Find resources by attribute or tag

< 1 > [⚙️](#)

-	Name	Route table ID	Explicit subr
<input type="checkbox"/>	Work Public Route Table	rtb-00931c151079e3901	subnet-0575
<input type="checkbox"/>	lab-rtb-public	rtb-024d4506cdb09c02e	subnet-098d
<input checked="" type="checkbox"/>	lab-rtb-private1-us-east-1a	rtb-0ae9b750c7b06900c	subnet-0a8f1
<input type="checkbox"/>	-	rtb-0c146424c441a4ff4	-
<input type="checkbox"/>	-	rtb-0ed1e132909880151	-
<input type="checkbox"/>	-	rtb-0a3e7d57328e2c8e7	-

[Edit routes](#)

Filter routes [Both](#) < 1 > [⚙️](#)

Destination	Target	Status	Propagat ed
0.0.0.0/0	nat- 0b6205f02e2c81ece	 ⓘ Active	No
10.0.0.0/16	local	 ⓘ Active	No

AWS Services N. V. vocabs/user2770782=104222099@student.swi

VPC dashboard EC2 Global View New Filter by VPC: Select a VPC

Virtual private cloud Your VPCs New Subnets Route tables Internet gateways Egress-only internet gateways Carrier gateways DHCP option sets Elastic IPs Managed prefix lists Endpoints Endpoint services NAT gateways Peering connections

Security Network ACLs Security groups

DNS firewall

Route tables (1/6) Info Actions Create route table Find resources by attribute or tag < 1 > Route tables (1/6) rtb-0ae9b750c7b06900c / lab-rtb-private1-us-east-1a Subnet associations Edge associations Route propagat Explicit subnet associations (1) Edit subnet associations Find subnet association < 1 > Name Subnet ID IPv4 CIDR IP Range lab-subnet-private1-us-east-1a subnet-0a8f6... 10.0.1.0/24

The screenshot shows the AWS VPC dashboard. On the left, a sidebar lists various VPC-related services: VPC dashboard, EC2 Global View (New), Filter by VPC (Select a VPC dropdown), Virtual private cloud (Your VPCs New, Subnets, Route tables, Internet gateways, Egress-only internet gateways, Carrier gateways, DHCP option sets, Elastic IPs, Managed prefix lists, Endpoints, Endpoint services, NAT gateways, Peering connections), Security (Network ACLs, Security groups), and DNS firewall. The Route tables section is currently selected.

Route tables (1/6) Info

Actions | **Create route table**

Find resources by attribute or tag

Name	Route table ID	Explicit subr
Work Public Route Table	rtb-00931c151079e3901	subnet-0575
lab-rtb-public	rtb-024d4506cdb09c02e	subnet-098d
lab-rtb-private1-us-east-1a	rtb-0ae9b750c7b06900c	subnet-0a8f1
-	rtb-0c146424c441a4ff4	-
-	rtb-0ed1e132909880151	-
-	rtb-0a3e7d57328e2c8e7	-

The following subnets have not been explicitly associated with any route tables and are therefore associated with the main route table:

Edit subnet associations

Find subnet association

Name	Subnet ID	IPv4 CIDR	IPv6 CIDR
lab-subnet-private2	subnet-034c...	10.0.3.0/24	-
lab-subnet-public2	subnet-0782...	10.0.2.0/24	-

20. Edit subnet associations

Details AWS Start Lab End Lab 0:50 Instructions Actions ▾

EN-US

This route table is therefore being used to route traffic from private subnets.

19. Choose the **Subnet associations** tab.

You created this route table in task 1 when you chose to create a VPC and multiple resources in the VPC. That action also created *lab-subnet-private-1* and associated that subnet with this route table. Now that you have created another private subnet, *lab-subnet-private-2*, you will associate this route table with that subnet as well.

20. In the Explicit subnet associations panel, choose **Edit subnet associations**

21. Leave *lab-subnet-private1-us-east-1a* selected, but also select *lab-subnet-private2*.

22. Choose **Save associations**

You will now configure the Route Table that is used

◀ Previous Next ▶

Name	Subnet ID	IPv4 CIDR	IPv6 CIDR
lab-subnet-private2	subnet-034c70450d6e4...	10.0.3.0/24	-
lab-subnet-public1-us-e...	subnet-098d2967ed87...	10.0.0.0/24	-
lab-subnet-public2	subnet-078274d1060d...	10.0.2.0/24	-
<input checked="" type="checkbox"/> lab-subnet-private1-us-...	subnet-0a8f616bc3c2a...	10.0.1.0/24	-

Selected subnets

subnet-0a8f616bc3c2a8d5d / lab-subnet-private1-us-east-1a X

Cancel Save associations

21. Leave *lab-subnet-private1-us-east-1a* selected, but also select *lab-subnet-private2*.

Details AWS Start Lab End Lab 0:49 Instructions Actions ▾

EN-US

You created this route table in task 1 when you chose to create a VPC and multiple resources in the VPC. That action also created *lab-subnet-private-1* and associated that subnet with this route table. Now that you have created another private subnet, *lab-subnet-private-2*, you will associate this route table with that subnet as well.

20. In the Explicit subnet associations panel, choose **Edit subnet associations**

21. Leave *lab-subnet-private1-us-east-1a* selected, but also select *lab-subnet-private2*.

22. Choose **Save associations**

You will now configure the Route Table that is used by the Public Subnets.

23. Select the **lab-rtb-public** route table (and deselect any other subnets).

◀ Previous Next ▶

Name	Subnet ID	IPv4 CIDR	IPv6 CIDR
<input checked="" type="checkbox"/> lab-subnet-private2	subnet-034c70450d6e4...	10.0.3.0/24	-
<input type="checkbox"/> lab-subnet-public1-us-e...	subnet-098d2967ed87...	10.0.0.0/24	-
<input type="checkbox"/> lab-subnet-public2	subnet-078274d1060d...	10.0.2.0/24	-
<input type="checkbox"/> lab-subnet-private1-us-...	subnet-0a8f616bc3c2a...	10.0.1.0/24	-

Selected subnets

subnet-034c70450d6e46ce4 / lab-subnet-private2 X

Cancel Save associations

23. Select the ***lab-rtb-public*** route table (and deselect any other subnets).

You have successfully updated subnet associations for rtb-0ae9b750c7b06900c / lab-rtb-private1-us-east-1a.

Route tables (1/6) Info

Actions ▾

	Name	Route table ID	Explicit subr
<input type="checkbox"/>	Work Public Route Table	rtb-00931c151079e3901	subnet-0575
<input checked="" type="checkbox"/>	lab-rtb-public	rtb-024d4506cdb09c02e	subnet-098d
<input type="checkbox"/>	lab-rtb-private1-us-east-1a	rtb-0ae9b750c7b06900c	subnet-034c
<input type="checkbox"/>	-	rtb-0c146424c441a4ff4	-
<input type="checkbox"/>	-	rtb-0ed1e132909880151	-
<input type="checkbox"/>	-	rtb-0a3e7d57328e2c8e7	-

rtb-024d4506cdb09c02e / lab-rtb-public

Details

Route table ID	Main
<input type="checkbox"/> rtb-024d4506cdb09c02e	<input type="checkbox"/> No
VPC	Owner ID

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24. Note that Destination ***0.0.0.0/0*** is set to Target ***igw-xxxxxxxx***, which is an **Internet Gateway**. This means that internet-bound traffic will be sent straight to the internet via this Internet Gateway.

You have successfully updated subnet associations for rtb-0ae9b750c7b06900c / lab-rtb-private1-us-east-1a.

Route tables (1/6) Info

C Actions ▾ Create route table

Find resources by attribute or tag

Name	Route table ID	Explicit subr
Work Public Route Table	rtb-00931c151079e3901	subnet-0575
lab-rtb-public	rtb-024d4506cdb09c02e	subnet-098d
lab-rtb-private1-us-east-1a	rtb-0ae9b750c7b06900c	subnet-034c
-	rtb-0c146424c441a4ff4	-
-	rtb-0ed1e132909880151	-
-	rtb-0a3e7d57328e2c8e7	-

Filter routes Both < 1 > Filter

Destination	Target	Status	Propagat ed
0.0.0.0/0	igw-00ed18ff7454248ce	Active	No
10.0.0.0/16	local	Active	No

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

aws Services N. V. vclabs/user2770782=104222099@student.swi

VPC > ... > Edit subnet associations

Edit subnet associations

Change which subnets are associated with this route table.

Available subnets (1/4)

Filter subnet associations

	Name	Subnet ID	IPv4 CIDR	IPv6 CIDR
<input type="checkbox"/>	lab-subnet-private2	subnet-034c70450d6e4...	10.0.3.0/24	-
<input type="checkbox"/>	lab-subnet-public1-us-e...	subnet-098d2967ed87...	10.0.0.0/24	-
<input checked="" type="checkbox"/>	lab-subnet-public2	subnet-078274d1060d...	10.0.2.0/24	-
<input type="checkbox"/>	lab-subnet-private1-us...	subnet-0a8f616bc3c2a...	10.0.1.0/24	-

Selected subnets

subnet-078274d1060d1182c / lab-subnet-public2

Cancel Save associations

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The screenshot shows the AWS VPC dashboard. On the left, there's a sidebar with options like 'VPC dashboard', 'EC2 Global View', 'Filter by VPC', and a dropdown for 'Select a VPC'. Below that is a section for 'Virtual private cloud' with links for 'Your VPCs', 'Subnets', and 'Route tables'. Under 'Route tables', there are links for 'Internet gateways', 'Egress-only internet gateways', 'Carrier gateways', 'DHCP option sets', 'Elastic IPs', and 'Managed prefix lists'. The main content area is titled 'Route tables (6)' and shows a table with six rows. The table has columns for 'Name', 'Route table ID', and 'Explicit subr'. The rows are: 1. Work Public Route Table (rtb-00931c151079e3901, subnet-0575), 2. lab-rtb-public (rtb-024d4506cdb09c02e, subnet-0782), 3. lab-rtb-private1-us-east-1a (rtb-0ae9b750c7b06900c, subnet-034c), 4. - (rtb-0c146424c441a4ff4, -), 5. - (rtb-0ed1e132909880151, -), and 6. - (rtb-0a3e7d57328e2c8e7, -). A green success message at the top right says: 'You have successfully updated subnet associations for rtb-024d4506cdb09c02e / lab-rtb-public.'

	Name	Route table ID	Explicit subr
<input type="checkbox"/>	Work Public Route Table	rtb-00931c151079e3901	subnet-0575
<input type="checkbox"/>	lab-rtb-public	rtb-024d4506cdb09c02e	subnet-0782
<input type="checkbox"/>	lab-rtb-private1-us-east-1a	rtb-0ae9b750c7b06900c	subnet-034c
<input type="checkbox"/>	-	rtb-0c146424c441a4ff4	-
<input type="checkbox"/>	-	rtb-0ed1e132909880151	-
<input type="checkbox"/>	-	rtb-0a3e7d57328e2c8e7	-

Successfully updated subnet associations for **lab-rtb-public**

TASK 3: CREATE A VPC SECURITY GROUP

29. Create security groups.

In this task, you will create a VPC security group, which acts as a virtual firewall. When you launch an instance, you associate one or more security groups with the instance. You can add rules to each security group that allow traffic to or from its associated instances.

29. In the left navigation pane, choose **Security groups**.

30. Choose **Create security group** and then configure:

- **Security group name:** Web Security Group
- **Description:** Enable HTTP access
- **VPC:** choose the X to remove the currently selected VPC, then from the drop down list choose lab-vpc

The screenshot shows the AWS VPC Security Groups page. The left sidebar has sections for Carrier gateways, DHCP option sets, Elastic IPs, Managed prefix lists, Endpoints, Endpoint services, NAT gateways, Peering connections, Security (with Security groups selected), DNS firewall, Network Firewall, and Virtual private network (VPN). The main pane displays a table of security groups with columns for Name, Security group ID, and Description. There are four entries:

Name	Security group ID	Description
-	sg-00fdfa19981c47166	default
-	sg-06bd11a09f0204aab	default
-	sg-07660ff2a0360c94b	default
-	sg-07c4ce5d813618534	Ec2SecurityGr

30. Configure the Security group.

The screenshot shows the AWS VPC 'Create security group' page. At the top, there are navigation links: 'aws' logo, 'Services' (with a dropdown arrow), a search bar, a refresh icon, a help icon, and user information 'N. V.' and 'voclabs/user2770782=104222099@student.swi'. Below the navigation is a breadcrumb trail: 'VPC > Security Groups > Create security group'. On the right, there is an info icon.

Create security group Info

A security group acts as a virtual firewall for your instance to control inbound and outbound traffic. To create a new security group, complete the fields below.

Basic details

Security group name Info

Web Security Group

Name cannot be edited after creation.

Description Info

Enable HTTP access

VPC Info

- **Security group name:** Web Security Group
- **Description:** Enable HTTP access
- **VPC:** choose the X to remove the currently selected VPC, then from the drop down list choose **lab-vpc**

The screenshot shows the AWS VPC Inbound Rules configuration page. At the top, there is a search bar with the placeholder "Enable HTTP access". Below it, a search bar shows the result "vpc-07ea577f5b8e9ce68". The main section is titled "Inbound rules" and contains one rule named "Inbound rule 1". This rule has the following details:

- Type Info:** HTTP
- Protocol Info:** TCP
- Port range Info:** 80
- Source type Info:** Anywhere-IPv4
- Description - optional Info:** Permit web requests

At the bottom left of the main panel, there is a button labeled "Add rule".

Add Inbound rule

- **Type:** *HTTP*
- **Source:** *Anywhere-IPv4*
- **Description:** Permit web requests

The screenshot shows the AWS VPC dashboard. In the top navigation bar, there are links for AWS Services, a search bar, and user information. Below the navigation bar, the left sidebar lists various VPC-related services like EC2 Global View, Filter by VPC, and a dropdown for Select a VPC. The main content area shows a breadcrumb path: VPC > ... > sg-0317661b36283747c - Web Security Group. A green success message box displays the text: "Security group (sg-0317661b36283747c | Web Security Group) was created successfully" with a "Details" link. The main title of the page is "sg-0317661b36283747c - Web Security Group". Below the title is an "Actions" button. The "Details" section contains the following information:

Security group name	sg-0317661b36283747c
Description	Enable HTTP access
Owner	779222503403
Inbound rules count	1 Permission entry
Outbound rules count	1 Permission entry

Below the details, there are tabs for "Inbound rules", "Outbound rules", and "Tags", with "Inbound rules" being the active tab. The "Inbound rules" section shows "1/1" rule. At the bottom of the page, there are links for CloudShell, Feedback, Privacy, Terms, and Cookie preferences, along with a copyright notice: "© 2023, Amazon Web Services, Inc. or its affiliates."

Successfully created security group.

TASK 4: LAUNCH A WEB SERVER INSTANCE

34. Search for and choose **EC2** to open the **EC2 console**.

The screenshot shows the AWS Services Catalog interface. At the top, there are navigation links for AWS, Services, Search, Notifications, Help, and User Information (N.V.). The user is signed in as 'voclabs/user2770782=104222099@student.swi'. Below the header, a search bar contains the text 'EC2'. To the right of the search bar are 'Cancel' and 'Search' buttons.

The main content area displays a list of services under the heading 'Services (13)'. The first item in the list is 'EC2', which is highlighted with a blue border. The description for EC2 is 'Virtual Servers in the Cloud'. Below EC2 is a list of other services:

- EC2 Image Builder**: A managed service to automate build, customize and deploy OS images.
- Recycle Bin**: Protect resources from accidental deletion.
- Amazon Inspector**: Continual vulnerability management at scale.
- AWS Firewall Manager**: Central management of firewall rules.
- GuardDuty**: Intelligent Threat Detection to Protect Your AWS Accounts and Workloads.
- AWS FIS**: Improve resiliency and performance with controlled experiments.
- AWS Outposts**: Run AWS Services On Premises.
- AWS Compute Optimizer**: Recommend optimal AWS Compute resources for your workloads.

At the bottom of the page, there are links for CloudShell, Feedback, Privacy, Terms, and Cookie preferences. A copyright notice at the very bottom states '© 2023, Amazon Web Services, Inc. or its affiliates.'

36. Name the instance.

The screenshot shows the AWS EC2 'Launch an instance' wizard. The top navigation bar includes the AWS logo, Services, a search bar, and user information 'voclabs/user2770782=104222099@student.swi'. The breadcrumb trail indicates the current step: EC2 > Instances > Launch an instance. A help icon is in the top right corner.

Name and tags Info

Name
Web Server 1

Add additional tags

Name: **Web server 1**

37. Choose an AMI from which to create the instance.

S | Services | Q | 🔍 | 📈 | ⓘ | N.V. | voclabs/user2770782=104222099@student.swi | ⓘ

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

Recents | **Quick Start**

Amazon Linux | macOS | Ubuntu | Windows

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

Amazon Machine Image (AMI)

Amazon Linux 2023 AMI Free tier eligible ▾
ami-03a6eaae9938c858c (64-bit (x86)) / ami-03f6c2c562b3df715 (64-bit (Arm))
Virtualization: hvm ENA enabled: true Root device type: ebs

Description
Amazon Linux 2023 AMI 2023.2.20230920.1 x86_64 HVM kernel-6.1

Architecture AMI ID
 ami-03a6eaae9938c858c Verified provider

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Amazone Linux

38. Instance type.

Instance type

t2.micro Free tier eligible

Family: t2 1 vCPU 1 GiB Memory 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

t2.micro

39. Key pair.

Key pair (login)

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 key pair

vockey

40. Network setting.

The screenshot shows the AWS Management Console with the AWS logo and navigation bar at the top. The main content area is titled "Network settings" with an "Info" link. It includes sections for "VPC - required" (set to "vpc-07ea577f5b8e9ce68 (lab-vpc) 10.0.0.0/16"), "Subnet" (set to "subnet-078274d1060d1182c lab-subnet-public2"), "Auto-assign public IP" (set to "Enable"), and "Firewall (security groups)" (set to "Select existing security group"). Under "Common security groups", a "Web Security Group" (sg-0317661b36283747c) is selected. A "Compare security group rules" link is also present. At the bottom, there is a link to "Advanced network configuration".

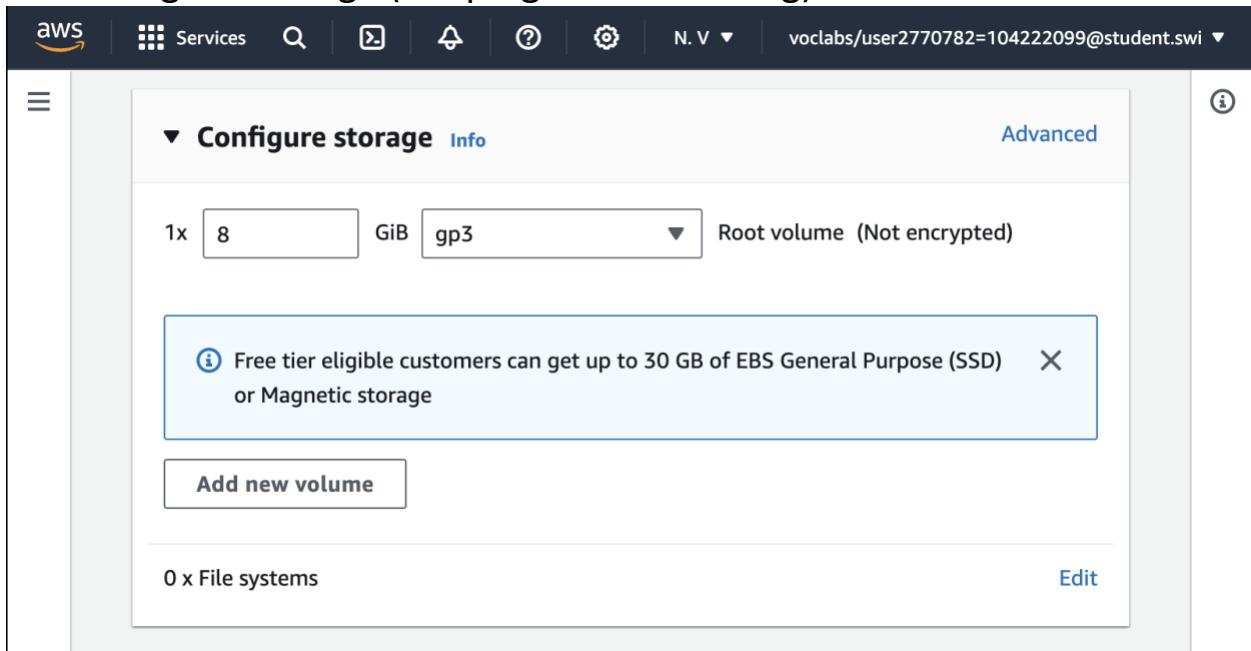
- **Network:** *lab-vpc*
- **Subnet:** *lab-subnet-public2 (not Private!)*
- **Auto-assign public IP:** *Enable*

Next, you will configure the instance to use the *Web Security Group* that you created earlier.

- Under Firewall (security groups), choose **Select existing security group.**
- For **Common security groups**, select **Web Security Group**.

This security group will permit HTTP access to the instance.

41. Configure storage (Keeping default setting)



42. Configure a script to run on the instance when it launches.

The screenshot shows the AWS CloudShell configuration interface. At the top, there are navigation links for Services, a search bar, and account information. Below the header, there are several dropdown menus for configuration settings like 'Metadata transport', 'Metadata version', 'Metadata response hop limit', and 'Allow tags in metadata'. A section for 'User data - optional' contains a file upload field labeled 'Choose file' and a code editor containing a bash script. The script installs Apache, PHP, and MySQL, then downloads and installs a web application from an S3 bucket. At the bottom, there is a checkbox for 'User data has already been base64 encoded'.

```
#!/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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This script will run with root user permissions on the guest OS of the instance. It will run automatically when the instance launches for the first time. The script installs a web server, a database, and PHP libraries, and then it downloads and installs a PHP web application on the web server.

43. Successfully initiated launch of instance.

The screenshot shows the AWS EC2 Instances Launch an instance page. At the top, there is a green success banner with the text "Successfully initiated launch of instance (i-01b4477b4580dd056)". Below the banner, there is a "Launch log" link. A "Next Steps" section follows, containing a search bar and a navigation menu with items 1 through 11. Below the search bar are two main sections: "Create billing and free tier usage alerts" and "Connect to your instance". Each section has a descriptive text, a call-to-action button, and a "Learn more" link. At the bottom, there are links for CloudShell, Feedback, Privacy, Terms, and Cookie preferences, along with a copyright notice for Amazon Web Services, Inc. or its affiliates.

Success
Successfully initiated launch of instance (i-01b4477b4580dd056)

Launch log

Next Steps

What would you like to do next with this instance, for example "create alarm" or "cre...

1 2 3 4 5 6 7 ... 11 >

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

Create EBS snapshot policy
Create a policy that automates the creation, retention, and deletion of EBS snapshots.
[Create EBS snapshot policy](#)

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Successfully initiated launch of instance

45. Wait until **Web Server 1** shows **2/2 checks passed** in the **Status check** column.

New EC2 Experience
Tell us what you think

EC2 Dashboard
EC2 Global View
Events

Instances

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

Images

- AMIs
- AMI Catalog

Elastic Block Store

- Volumes
- Snapshots
- Lifecycle Manager

Network & Security

- Security Groups
- Elastic IPs
- Placement Groups

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

Connect Instance state Actions ▾

Launch instances ▾

Find instance by attribute or tag (case-sensitive)

Instance type	Status check	Alarm status	Availability Zone
t2.micro	2/2 checks passed	No alarms	+ us-east-1a
t2.micro	2/2 checks passed	No alarms	+ us-east-1b

Instance: i-01b4477b4580dd056 (Web Server 1)

Details Security Networking Storage Status ch ▾

Instance summary [Info](#)

Instance ID	Public IPv4 address
i-01b4477b4580dd056 (Web Server 1)	54.210.247.199 open address
Private IPv4 addresses	IPv6 address
10.0.2.93	-
Instance state	Public IPv4 DNS
Running	ec2-54-210-247-199.compute-1.amazonaws.com open address
Hostname type	Private IP DNS name (IPv4 only)

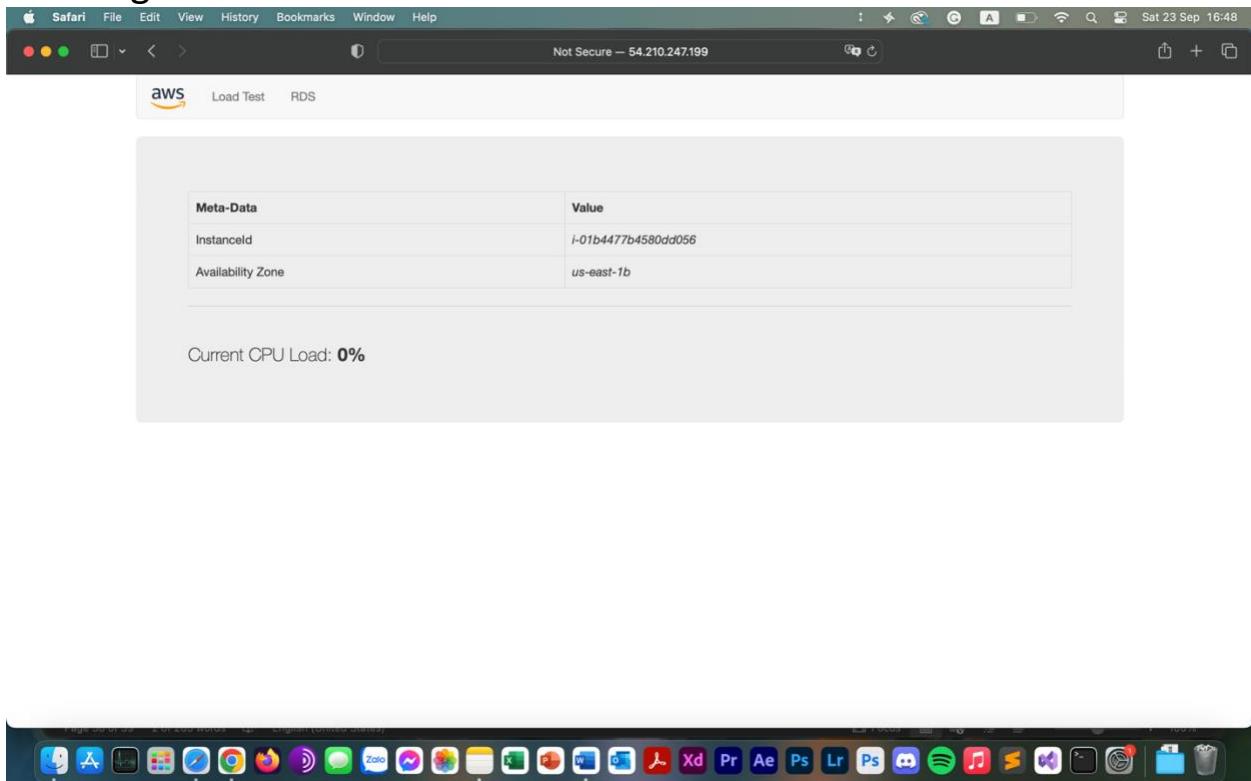
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Status check: **2/2 checks passed.**

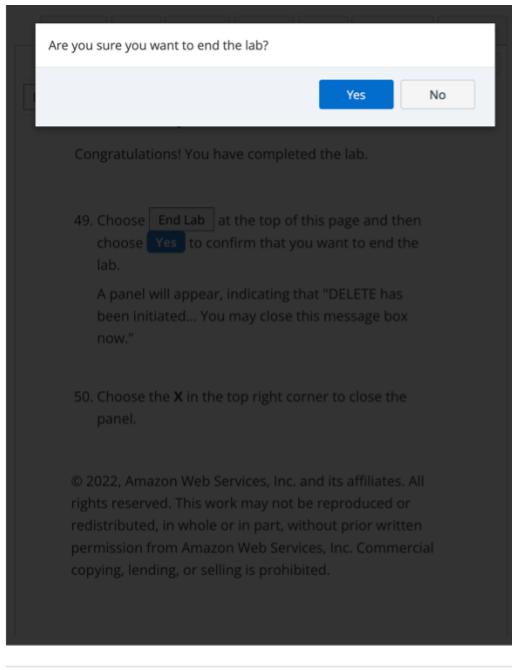
47+48. Copy the Public IPv4 DNS value shown in the Details tab at the bottom of the page. Open a new web browser tab, paste the Public

DNS value and press Enter. You should see a web page displaying the AWS logo and instance meta-data values.



Web page displaying the AWS logo and instance meta-data values.

50. End lab.



Congratulations! You have completed the lab.

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

A panel will appear, indicating that "DELETE has been initiated... You may close this message box now."

50. Choose the X in the top right corner to close the panel.

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New EC2 Experience Tell us what you think

Instances (1/2) Info

Launch instances

Find instance by attribute or tag (case-sensitive)

Name	Instance ID	Instance state
Bastion Host	i-0e0de4171246c3924	Running
Web Server 1	i-01b4477b4580dd056	Running

Instance: i-01b4477b4580dd056 (Web Server 1)

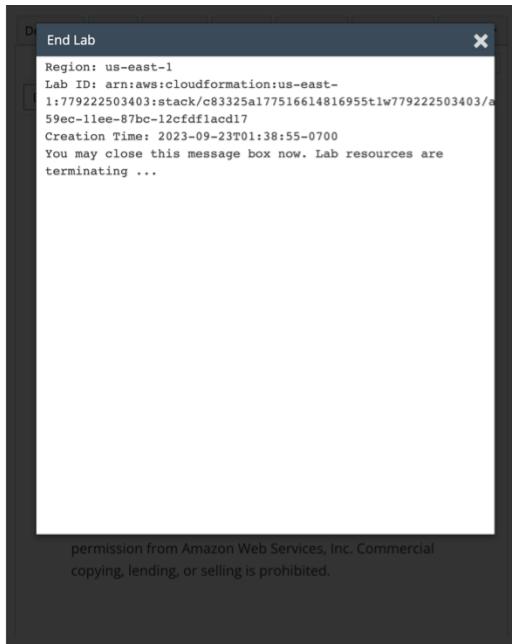
Working Storage Status checks Monitoring Tags

Instance summary Info

Instance ID	Public IPv4 address
i-01b4477b4580dd056 (Web Server 1)	54.210.247.199 [open address]
Private IPv4 addresses	IPv6 address
10.0.2.93	-
Instance state	Public IPv4 DNS
Running	ec2-54-210-247-199.compute-1.amazonaws.com [open address]
Hostname type	Private IP DNS name (IPv4 only)

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New EC2 Experience Tell us what you think

Instances (1/2) Info

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Working Storage Status checks Monitoring Tags

Instance summary Info

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Running	ec2-54-210-247-199.compute-1.amazonaws.com [open address]
Hostname type	Private IP DNS name (IPv4 only)

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