

Step 1: Create a Virtual Private Cloud (VPC):

IPv4 CIDR block: 10.0.0.0/16

vpc-0ccc02518d0ed2c98 / VPC-coffee-shop

Actions ▾

Details Info

VPC ID vpc-0ccc02518d0ed2c98	State Available	DNS hostnames Enabled	DNS resolution Enabled
Tenancy Default	DHCP option set dopt-0db820434ee15e22f	Main route table rtb-077c3a372dbfc7849	Main network ACL acl-08d74a7e16c46c36a
Default VPC No	IPv4 CIDR 10.0.0.0/16	IPv6 pool -	IPv6 CIDR -
Network Address Usage metrics Disabled	Route 53 Resolver DNS Firewall rule groups -	Owner ID 858881817729	

Created two subnets, one public and one private.

- IPv4 CIDR blocks for public: 10.0.1.0/24
- IPv4 CIDR blocks for private: 10.0.2.0/24

<input type="checkbox"/>	Name	Subnet ID	State	VPC	IPv4 CIDR
<input type="checkbox"/>	Public-Subnet	subnet-0c6d26e0414236a21	Available	vpc-0ccc02518d0ed2c98 VPC-coffee-shop	10.0.1.0/24
<input type="checkbox"/>	Private-Subnet	subnet-0642d57419e857a29	Available	vpc-0ccc02518d0ed2c98 VPC-coffee-shop	10.0.2.0/24

Created routing table for our public subnet

VPC > Route tables > rtb-0a7a296d9aa9f93da

rtb-0a7a296d9aa9f93da / Public-RT

Actions ▾

You can now check network connectivity with Reachability Analyzer

Run Reachability Analyzer X

Details Info

Route table ID rtb-0a7a296d9aa9f93da	Main No	Explicit subnet associations subnet-0c6d26e0414236a21 / Public-Subnet	Edge associations -
VPC vpc-0ccc02518d0ed2c98 VPC-coffee-shop	Owner ID 858881817729		

Routes

Subnet associations

Edge associations

Route propagation

Tags

Routes (1)

Edit routes


Filter routes

Both

< 1 > ⚙

Destination	Target	Status	Propagated
10.0.0.0/16	local	Active	No

Created internet gateway and attached it to our VPC

 Internet gateway igw-0ea7d5b285dd4cd78 successfully attached to vpc-0ccc02518d0ed2c98




[VPC](#) > [Internet gateways](#) > igw-0ea7d5b285dd4cd78

igw-0ea7d5b285dd4cd78 / coffee-shop-IGW

Actions

Details

Info

Internet gateway ID	State	VPC ID	Owner
 igw-0ea7d5b285dd4cd78	 Attached	vpc-0ccc02518d0ed2c98 VPC-coffee-shop	 858881817729

Tags

Manage tags

Key

Value


Name	coffee-shop-IGW
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Attached internet gateway to the route table

[VPC](#) > [Route tables](#) > rtb-0a7a296d9aa9f93da

rtb-0a7a296d9aa9f93da / Public-RT




Actions

 You can now check network connectivity with Reachability Analyzer

Run Reachability Analyzer

Details

Info

Route table ID	Main	Explicit subnet associations	Edge associations
 rtb-0a7a296d9aa9f93da	 No	subnet-0c6d26e0414236a21 / Public-Subnet	-
VPC	Owner ID		
vpc-0ccc02518d0ed2c98 VPC-coffee-shop	 858881817729		

Routes

Subnet associations

Edge associations

Route propagation

Tags

Routes (2)

Edit routes



Both

Destination

Target

Status

Propagated

0.0.0.0/0	igw-0ea7d5b285dd4cd78	 Active	No
10.0.0.0/16	local	 Active	No

Created security group to allow inbound and outbound traffic

VPC > Security Groups > sg-01b6c61269f84b5ac - Coffee-shop-SG

sg-01b6c61269f84b5ac - Coffee-shop-SG Actions

Details

Security group name ☞ Coffee-shop-SG	Security group ID ☞ sg-01b6c61269f84b5ac	Description ☞ Allow all inbound and Outbound traffic	VPC ID ☞ vpc-0ccc02518d0ed2c98
Owner ☞ 858881817729	Inbound rules count 2 Permission entries	Outbound rules count 1 Permission entry	

Inbound rules | Outbound rules | Tags

Inbound rules (2) Refresh Manage tags Edit inbound rules

<input type="checkbox"/>	Name	Security group rule...	IP version	Type	Protocol	Port range	Source
<input type="checkbox"/>	-	sgr-0e7fb091943a6bc91	IPv4	HTTP	TCP	80	0.0.0.0/0
<input type="checkbox"/>	-	sgr-09717b05501aca6...	IPv4	SSH	TCP	22	0.0.0.0/0

Step 2: Launch EC2 Instances:

Created EC2 instance for the website (Public Subnet)

☒ Website-Coffee-Shop

i-049ca92248d4e4aee

☒ Running

t2.micro

☒ 2/2 checks passed

No alarms

+

eu-west-3a

ec2-35-180-22-96.eu-w...

35.180.22.96

Instance: i-049ca92248d4e4aee (Website-Coffee-Shop) Settings Close

Details | Security | Networking | Storage | Status checks | Monitoring | Tags

▼ Instance summary [Info](#)

Instance ID ☞ i-049ca92248d4e4aee (Website-Coffee-Shop)	Public IPv4 address ☞ 35.180.22.96 open address	Private IPv4 addresses ☞ 10.0.1.149
IPv6 address -	Instance state <input checked="" type="checkbox"/> Running	Public IPv4 DNS ☞ ec2-35-180-22-96.eu-west-3.compute.amazonaws.com open address
Hostname type IP name: ip-10-0-1-149.eu-west-3.compute.internal	Private IP DNS name (IPv4 only) ☞ ip-10-0-1-149.eu-west-3.compute.internal	Elastic IP addresses -
Answer private resource DNS name -	Instance type t2.micro	AWS Compute Optimizer finding Opt-in to AWS Compute Optimizer for recommendations.
Auto-assigned IP address ☞ 35.180.22.96 [Public IP]	VPC ID ☞ vpc-0ccc02518d0ed2c98 (VPC-coffee-shop)	



Problem

Created the 2nd instance for backend (Private subnet)

Backend-coffee-shop

i-0cd56aad77c910d3d

Running

t2.micro

2/2 checks passed

No alarms

+

eu-west-3a

-

-

Instance: i-0cd56aad77c910d3d (Backend-coffee-shop)

Details

Security

Networking

Storage

Status checks

Monitoring

Tags

▼ Instance summary Info

Instance ID

i-0cd56aad77c910d3d (Backend-coffee-shop)

IPv6 address

-

Hostname type

IP name: ip-10-0-2-221.eu-west-3.compute.internal

Answer private resource DNS name

-

Auto-assigned IP address

-

IAM Role

-

Public IPv4 address

-

Instance state

Running

Private IP DNS name (IPv4 only)

ip-10-0-2-221.eu-west-3.compute.internal

Instance type

t2.micro

VPC ID

vpc-0ccc02518d0ed2c98 (VPC-coffee-shop)

Subnet ID

subnet-0642d57419e857a29 (Private-Subnet)

Private IPv4 addresses

10.0.2.221

Public IPv4 DNS

-

Elastic IP addresses

-

AWS Compute Optimizer finding

Opt-in to AWS Compute Optimizer for recommendations. | Learn more

Auto Scaling Group name

-

Step 3: Configure Network ACLs:

Created Network ACL and associated to 2 subnets

VPC > Network ACLs > acl-0323760f098f1c2ba / coffee-shop-ACL

acl-0323760f098f1c2ba / coffee-shop-ACL

Actions

DetailsInfo

Network ACL ID

acl-0323760f098f1c2ba

Associated with

2 Subnets

Default

No

VPC ID

vpc-0ccc02518d0ed2c98 / VPC-coffee-shop

Owner

858881817729

Inbound rules

Outbound rules

Subnet associations

Tags

You can now check network connectivity with Reachability Analyzer

Run Reachability Analyzer

Inbound rules (2)

Edit inbound rules

Filter inbound rules

< 1 >

Rule number	Type	Protocol	Port range	Source	Allow/Deny
1	HTTP (80)	TCP (6)	80	0.0.0.0/0	Allow
*	All traffic	All	All	0.0.0.0/0	Deny

Step 4: Set Up Elastic Load Balancer (ELB):

Created target groups

EC2 > Target groups

Target groups (1/1)Info

Actions

Create target group

Search or filter target groups

< 1 >

	Name	ARN	Port	Protocol	Target type	Load balancer	VPC ID
<input checked="" type="checkbox"/>	Coffee-shop-TG	arn:aws:elasticloadbalanci...	80	HTTP	Instance	Coffee-Shop-LB	vpc-0ccc02518d0ed2c98

Target group: Coffee-shop-TG

Details

Targets

Monitoring

Health checks

Attributes

Tags

Registered targets (2)

Deregister

Register targets

Filter resources by property or value

< 1 >

	Instance ID	Name	Port	Zone	Health status	Health status details
<input type="checkbox"/>	i-0f2c1df39589a7c89	website-coffee-shop-2	80	eu-west-3c	healthy	
<input type="checkbox"/>	i-049ca92248d4e4aee	Website-Coffee-Shop	80	eu-west-3a	healthy	

Created Application load balancer

Load balancers (1/1)

Elastic Load Balancing scales your load balancer capacity automatically in response to changes in incoming traffic.

Filter by property or value

Name	DNS name	State	VPC ID	Availability Zones	Type	Date created
Coffee-Shop-LB	Coffee-Shop-LB-1512328...	Active	vpc-0ccc02518d0ed2c98	2 Availability Zones	application	August 13, 2023, 22:50 (UTC+02:00)

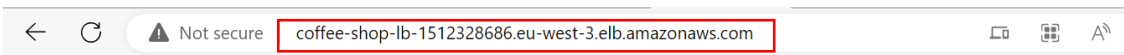
Load balancer: Coffee-Shop-LB

Details | Listeners and rules | Network mapping | Security | Monitoring | Integrations | Attributes | Tags

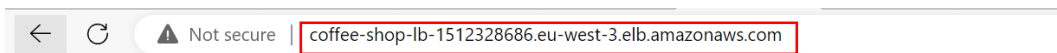
Details

Load balancer type Application	Status Active	VPC vpc-0ccc02518d0ed2c98	IP address type IPv4
Scheme Internet-facing	Hosted zone Z3Q77PNBQ571R4	Availability Zones subnet-0c6d26e0414236a21 eu-west-3a (euw3-az1) subnet-0ea6ad05aeba9237a eu-west-3c (euw3-az3)	Date created August 13, 2023, 22:50 (UTC+02:00)
Load balancer ARN arn:aws:elasticloadbalancing:eu-west-3:858881817729:loadbalancer/app/Coffee-Shop-LB/4d071de8e5d0e4e5		DNS name info Coffee-Shop-LB-1512328686.eu-west-3.elb.amazonaws.com (A Record)	

To check if the load balancer is running



Welcome to the coffee shop website EC2 instance



Welcome to the 2nd coffee shop website EC2 instance