

Cloud Computing – Lab 3

Anudit Nagar - E18CSE024

Create VPC

Assignment VPC Management Console console.aws.amazon.com/vpc/home?region=us-east-1#wizardFullpagePublicOnly

Step 2: VPC with a Single Public Subnet

IPv4 CIDR block: 10.0.0.0/16 (65531 IP addresses available)

IPv6 CIDR block: ☒ No IPv6 CIDR block
☐ Amazon provided IPv6 CIDR block
☐ IPv6 CIDR block owned by me

VPC name: lab3vpc

Public subnet's IPv4 CIDR: 10.0.0.0/24 (251 IP addresses available)

Availability Zone: us-east-1a

Subnet name: lab3subnet-public

You can add more subnets after AWS creates the VPC.

Service endpoints

Add Endpoint

Enable DNS hostnames: ☒ Yes ☐ No

Hardware tenancy: Default

Cancel and Exit Back Create VPC

Feedback English (US) © 2008 - 2021 Amazon Web Services, Inc. or its affiliates All rights reserved. Privacy Policy Terms of Use

Assignment Your VPCs | VPC Management Console console.aws.amazon.com/vpc/home?region=us-east-1#vpcs

New VPC Experience Learn more

VPC Dashboard

Filter by VPC: Select a VPC

Virtual Private Cloud

Your VPCs

Subnets

Route Tables

Internet Gateways

Egress Only Internet Gateways

Carrier Gateways

DHCP Options Sets

Elastic IPs

Managed Prefix Lists

Endpoints

Endpoint Services

NAT Gateways

Peering Connections

SECURITY

Network ACLs

Security Groups

REACHABILITY

Reachability Analyzer

AWS NETWORK FIREWALL

Firewalls

Firewall policies

Network Firewall rule groups

VIRTUAL PRIVATE NETWORK (VPN)

Customer Gateways

Virtual Private Gateways

Your VPCs (1/2) Info

Filter VPCs

Name	VPC ID	State	IPv4 CIDR	IPv6 CIDR (Network border group)	IPv6 pool
lab3vpc	vpc-085e44e4b25f521f1	Available	10.0.0.0/16	-	-
-	vpc-d79235aa	Available	172.31.0.0/16	-	-

vpc-085e44e4b25f521f1 / lab3vpc

Details CIDRs Flow logs Tags

Details

VPC ID vpc-085e44e4b25f521f1	State Available	DNS hostnames Enabled	DNS resolution Enabled
Tenancy Default	DHCP options set dopt-8f0545f5	Main route table rtb-0a94863c27c1b84ba	Main network ACL acl-0a2f34e3af04f7702
Default VPC No	IPv4 CIDR 10.0.0.0/16	IPv6 pool -	IPv6 CIDR (Network border group) -
Owner ID 501151665505			

Feedback English (US) © 2008 - 2021 Amazon Web Services, Inc. or its affiliates All rights reserved. Privacy Policy Terms of Use

Attach Internet Gateway

The screenshot shows the AWS Management Console interface for an Internet Gateway. The breadcrumb navigation indicates the path: VPC > Internet gateways > igw-0f0b05d1b69beacf7. The main content area displays the details for the Internet Gateway with ID igw-0f0b05d1b69beacf7. The state is 'Attached'. The VPC ID is vpc-085e44e4b25f521f1 | lab3vpc. The owner is 501151665505. There are no tags associated with this resource.

Details info

Internet Gateway ID	igw-0f0b05d1b69beacf7	State	Attached	VPC ID	vpc-085e44e4b25f521f1 lab3vpc	Owner	501151665505
---------------------	-----------------------	-------	----------	--------	---------------------------------	-------	--------------

Tags

Search tags

Key Value

No tags associated with this resource

Manage tags

Create ec2 in public subnet and check connectivity.

```
ubuntu@ip-10-0-0-31:~$
login as: ubuntu
Authentication with public key "imported-openssh-key" from agent
Welcome to Ubuntu 20.04.1 LTS (GNU/Linux 5.4.0-1029-aws x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:    https://landscape.canonical.com
 * Support:       https://ubuntu.com/advantage

System information as of Thu Jan 28 05:39:39 UTC 2021

System load: 0.02               Processes: 107
Usage of /: 24.1k of 7.69GB     Users logged in: 1
Memory usage: 25%              IP address for eth0: 10.0.0.31
Swap usage: 0%

16 updates can be installed immediately.
8 of these updates are security updates.
To see these additional updates run: apt list --upgradable

*** System restart required ***
last login: Thu Jan 28 05:29:35 2021 from 122.177.77.155
ubuntu@ip-10-0-0-31:~$ ping google.com
PING google.com (142.250.73.238) 56(84) bytes of data:
64 bytes from iad30s36-in-f14.1e100.net (142.250.73.238): icmp_seq=1 ttl=113 time=1.09 ms
64 bytes from iad30s36-in-f14.1e100.net (142.250.73.238): icmp_seq=2 ttl=113 time=1.10 ms
64 bytes from iad30s36-in-f14.1e100.net (142.250.73.238): icmp_seq=3 ttl=113 time=1.12 ms
64 bytes from iad30s36-in-f14.1e100.net (142.250.73.238): icmp_seq=4 ttl=113 time=1.09 ms
64 bytes from iad30s36-in-f14.1e100.net (142.250.73.238): icmp_seq=5 ttl=113 time=1.15 ms
64 bytes from iad30s36-in-f14.1e100.net (142.250.73.238): icmp_seq=6 ttl=113 time=1.20 ms
64 bytes from iad30s36-in-f14.1e100.net (142.250.73.238): icmp_seq=7 ttl=113 time=1.13 ms
64 bytes from iad30s36-in-f14.1e100.net (142.250.73.238): icmp_seq=8 ttl=113 time=1.11 ms
64 bytes from iad30s36-in-f14.1e100.net (142.250.73.238): icmp_seq=9 ttl=113 time=1.12 ms
64 bytes from iad30s36-in-f14.1e100.net (142.250.73.238): icmp_seq=10 ttl=113 time=1.08 ms
64 bytes from iad30s36-in-f14.1e100.net (142.250.73.238): icmp_seq=11 ttl=113 time=1.10 ms
64 bytes from iad30s36-in-f14.1e100.net (142.250.73.238): icmp_seq=12 ttl=113 time=1.09 ms
64 bytes from iad30s36-in-f14.1e100.net (142.250.73.238): icmp_seq=13 ttl=113 time=1.08 ms
64 bytes from iad30s36-in-f14.1e100.net (142.250.73.238): icmp_seq=14 ttl=113 time=1.09 ms
64 bytes from iad30s36-in-f14.1e100.net (142.250.73.238): icmp_seq=15 ttl=113 time=1.12 ms
64 bytes from iad30s36-in-f14.1e100.net (142.250.73.238): icmp_seq=16 ttl=113 time=1.12 ms
64 bytes from iad30s36-in-f14.1e100.net (142.250.73.238): icmp_seq=17 ttl=113 time=1.12 ms
64 bytes from iad30s36-in-f14.1e100.net (142.250.73.238): icmp_seq=18 ttl=113 time=1.18 ms
64 bytes from iad30s36-in-f14.1e100.net (142.250.73.238): icmp_seq=19 ttl=113 time=1.18 ms
64 bytes from iad30s36-in-f14.1e100.net (142.250.73.238): icmp_seq=20 ttl=113 time=1.38 ms
64 bytes from iad30s36-in-f14.1e100.net (142.250.73.238): icmp_seq=21 ttl=113 time=1.17 ms
64 bytes from iad30s36-in-f14.1e100.net (142.250.73.238): icmp_seq=22 ttl=113 time=1.10 ms
64 bytes from iad30s36-in-f14.1e100.net (142.250.73.238): icmp_seq=23 ttl=113 time=1.14 ms
64 bytes from iad30s36-in-f14.1e100.net (142.250.73.238): icmp_seq=24 ttl=113 time=1.10 ms
64 bytes from iad30s36-in-f14.1e100.net (142.250.73.238): icmp_seq=25 ttl=113 time=1.11 ms
64 bytes from iad30s36-in-f14.1e100.net (142.250.73.238): icmp_seq=26 ttl=113 time=1.10 ms
64 bytes from iad30s36-in-f14.1e100.net (142.250.73.238): icmp_seq=27 ttl=113 time=1.06 ms
64 bytes from iad30s36-in-f14.1e100.net (142.250.73.238): icmp_seq=28 ttl=113 time=1.13 ms
64 bytes from iad30s36-in-f14.1e100.net (142.250.73.238): icmp_seq=29 ttl=113 time=1.16 ms
64 bytes from iad30s36-in-f14.1e100.net (142.250.73.238): icmp_seq=30 ttl=113 time=1.13 ms
^C
--- google.com ping statistics ---
30 packets transmitted, 30 received, 0% packet loss, time 2904ms
rtt min/avg/max/mdev = 1.027/1.128/1.379/0.062 ms
ubuntu@ip-10-0-0-31:~$
```

Create private subnet.

VPC ID

Create subnets in this VPC.

vpc-085e44e4b25f521f1 (lab3vpc)

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.

lab3subnet-private

The name can be up to 256 characters long.

Availability Zone

Choose the zone in which your subnet will reside, or let Amazon choose one for you.

US East (N. Virginia) / us-east-1a

IPv4 CIDR block

10.0.0.0/24

Tags - optional

Key

Value - optional

Remove

Q Name X Q lab3subnet-private X

Add new tag

You can add 49 more tags.

Remove

Add new subnet

Feedback

English (US)

© 2008 - 2021, Amazon Web Services, Inc. or its affiliates. All rights reserved. Privacy Policy Terms of Use

New VPC Experience

Learn more

VPC Dashboard

Filter by VPC:

Q Select a VPC

VIRTUAL PRIVATE CLOUD

Your VPCs

Subnets

Route Tables

Internet Gateways

Egress Only Internet Gateways

Carrier Gateways

DHCP Options Sets

Elastic IPs

Managed Prefix Lists

Endpoints

Endpoint Services

NAT Gateways

Peering Connections

SECURITY

Network ACLs

Security Groups

REACHABILITY

Reachability Analyzer

AWS NETWORK FIREWALL

Firewalls

Firewall policies

Network Firewall rule groups

VIRTUAL PRIVATE NETWORK (VPN)

Customer Gateways

Virtual Private Gateways

You have successfully created 1 subnet: subnet-077c22cde86b60439

Subnets (8)

Info

Filter subnets

Actions

Create subnet

	Name	Subnet ID	State	VPC	IPv4 CIDR	IPv6 CIDR	Available IPv4 addresses
<input type="checkbox"/>	lab3subnet-private	subnet-077c22cde86b60439	Available	vpc-085e44e4b25f521f1 lab...	10.0.1.0/24	-	251
<input type="checkbox"/>	-	subnet-4c76e213	Available	vpc-d79235aa	172.31.32.0/20	-	4091
<input type="checkbox"/>	-	subnet-96835da7	Available	vpc-d79235aa	172.31.48.0/20	-	4091
<input type="checkbox"/>	lab3subnet-public	subnet-09ba063b7fb83e3f	Available	vpc-085e44e4b25f521f1 lab...	10.0.0.0/24	-	250
<input type="checkbox"/>	-	subnet-c5e89388	Available	vpc-d79235aa	172.31.16.0/20	-	4091
<input type="checkbox"/>	-	subnet-a62abc87	Available	vpc-d79235aa	172.31.80.0/20	-	4091
<input type="checkbox"/>	-	subnet-c958d3af	Available	vpc-d79235aa	172.31.0.0/20	-	4091
<input type="checkbox"/>	-	subnet-25afe22b	Available	vpc-d79235aa	172.31.64.0/20	-	4091

Select a subnet

Feedback

English (US)

© 2008 - 2021, Amazon Web Services, Inc. or its affiliates. All rights reserved. Privacy Policy Terms of Use

Create ec2 in private subnet.

Assignment Launch instance wizard | EC2 M... x +

console.aws.amazon.com/ec2/v2/home?region=us-east-1#/LaunchInstanceWizard

1. Choose AMI 2. Choose Instance Type 3. Configure Instance 4. Add Storage 5. Add Tags 6. Configure Security Group 7. Review

Step 3: Configure Instance Details

Configure the instance to suit your requirements. You can launch multiple instances from the same AMI, request Spot instances to take advantage of the lower pricing, assign an access management role to the instance, and more.

Number of instances: 1 [Launch into Auto Scaling Group](#)

Purchasing option: ☐ Request Spot instances

Network: vpc-085e44e4b25f521f1 | lab3vpc [Create new VPC](#)

Subnet: subnet-077c22cde86b60439 | lab3subnet-private | 251 IP Addresses available [Create new subnet](#)

Auto-assign Public IP: ☐ Use subnet setting (Disable)

Placement group: ☐ Add instance to placement group

Capacity Reservation: Open

Domain join directory: No directory [Create new directory](#)

IAM role: None [Create new IAM role](#)

CPU options: ☐ Specify CPU options

Shutdown behavior: Stop

Stop - Hibernate behavior: ☐ Enable hibernation as an additional stop behavior

Enable termination protection: ☐ Protect against accidental termination

Monitoring: ☐ Enable CloudWatch detailed monitoring
Additional charges apply.

Tenancy: Shared - Run a shared hardware instance
Additional charges will apply for dedicated tenancy.

Elastic Inference: ☐ Add an Elastic Inference accelerator
Additional charges apply.

Credit specification: ☐ Unlimited
Additional charges may apply.

[Cancel](#) [Previous](#) [Review and Launch](#) [Next: Add Storage](#)

<https://console.aws.amazon.com/console/home?region=us-east-1> © 2008 - 2021, Amazon Web Services, Inc. or its affiliates. All rights reserved. [Privacy Policy](#) [Terms of Use](#)

Ping ec2 in private subnet from ec2 in public subnet.

Assignment Instances | EC2 Management Co... x +

console.aws.amazon.com/ec2/v2/home?region=us-east-1#/Instances

Search for services, features, marketplace products, and docs [Alt+S]

New EC2 Experience [Learn more](#)

EC2 Dashboard [New](#)

Events

Tags

Limits

Instances

Instances [New](#)

Instance Types

Launch Templates

Spot Requests

Savings Plans

Reserved Instances

Dedicated Hosts [New](#)

Scheduled Instances

Capacity Reservations

Images

AMIs

Elastic Block Store

Volumes

Snapshots

Lifecycle Manager

Network & Security

Security Groups [New](#)

Elastic IPs [New](#)

Placement Groups

Key Pairs

Network Interfaces [New](#)

Load Balancing

Instances (1/2) Info

Filter instances

Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 DNS	Public IPv4 ...	Elastic IP
lab3	i-079c502b5c9cd43e7	Running	t2.micro	2/2 checks ...	2 alarms ...	us-east-1a	ec2-35-153-105-100.c...	35.153.105.100	-
lab3-private	i-0c2807727463ad4ef	Running	t2.micro	-	No alarms	us-east-1a	-	-	-

Instance: i-0c2807727463ad4ef

Details

Instance ID: i-0c2807727463ad4ef

Instance type: t2.micro

Instance state: Running

Instance details

Platform: Amazon Linux 2

AMI ID: ami-0c2807727463ad4ef

Monitoring

```
ubuntu@ip-10-0-0-31:~$ ping 10.0.1.195
64 bytes from iad3036-in-f14.1e100.net: icmp_seq=14 ttl=113 time=1.00 ms
64 bytes from iad3036-in-f14.1e100.net: icmp_seq=15 ttl=113 time=1.22 ms
64 bytes from iad3036-in-f14.1e100.net: icmp_seq=16 ttl=113 time=1.12 ms
64 bytes from iad3036-in-f14.1e100.net: icmp_seq=17 ttl=113 time=1.12 ms
64 bytes from iad3036-in-f14.1e100.net: icmp_seq=18 ttl=113 time=0.18 ms
64 bytes from iad3036-in-f14.1e100.net: icmp_seq=19 ttl=113 time=1.15 ms
64 bytes from iad3036-in-f14.1e100.net: icmp_seq=20 ttl=113 time=1.30 ms
64 bytes from iad3036-in-f14.1e100.net: icmp_seq=21 ttl=113 time=1.7 ms
64 bytes from iad3036-in-f14.1e100.net: icmp_seq=22 ttl=113 time=1.10 ms
64 bytes from iad3036-in-f14.1e100.net: icmp_seq=23 ttl=113 time=1.14 ms
64 bytes from iad3036-in-f14.1e100.net: icmp_seq=24 ttl=113 time=1.10 ms
64 bytes from iad3036-in-f14.1e100.net: icmp_seq=25 ttl=113 time=1.11 ms
64 bytes from iad3036-in-f14.1e100.net: icmp_seq=26 ttl=113 time=1.10 ms
64 bytes from iad3036-in-f14.1e100.net: icmp_seq=27 ttl=113 time=1.06 ms
64 bytes from iad3036-in-f14.1e100.net: icmp_seq=28 ttl=113 time=1.19 ms
64 bytes from iad3036-in-f14.1e100.net: icmp_seq=29 ttl=113 time=1.16 ms
64 bytes from iad3036-in-f14.1e100.net: icmp_seq=30 ttl=113 time=1.13 ms
^C

```

Private IPv4 addresses

Private IPv4 address copied

Private IPv4 DNS

ip-10-0-1-195.ec2.internal

VPC ID

vpc-085e44e4b25f521f1 (lab3vpc)

Subnet ID

subnet-077c22cde86b60439 (lab3subnet-private)