

Lab 2

1st Part



Without SSH

Required:

Screenshot from the public ip and private ip of the instance and a screenshot from the logs of the instance to demonstrate the apache is installed

1) creating VPC +subnet +route table+IGW

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

project

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

NUMBER OF AVAILABILITY ZONES (AZs) [Info](#)

Choose the number of AZs in which to provision subnets. We recommend at least two AZs for high availability.

1 2 3

Customize AZs

Number of public subnets [Info](#)

The number of public subnets to add to your VPC. Use public subnets for web applications that need to be publicly accessible over the internet.

0 1

Number of private subnets [Info](#)

The number of private subnets to add to your VPC. Use private subnets to secure backend resources that don't need public access.

0 1 2

Customize subnets CIDR blocks

Public subnet CIDR block in us-east-1a

10.0.0.0/24 256 IPs

Preview

Introducing the new create VPC experience

We've designed the new create VPC experience to make it easier to use. Now you can visualize the resources that will be created.

- New: Edit the name tag of individual resources. Uncheck "Auto-generate" and set each name tag in the visualizer directly.

[Let us know what you think.](#)

VPC [Show details](#)

Your AWS virtual network

project-vpc

Subnets (1)

Subnets within this VPC

us-east-1a

project-subnet-public1-us-east-1a

Route tables (1)

Route network traffic to resources

project-rtb-public

Network connect

Connections to other network

project-igw

Create VPC workflow



Creating VPC Resources

Thank you for using the new create VPC experience. Let us k

✔ Success

▼ Details

- ✔ Create VPC: [vpc-0020e85914e027c73](#) 
- ✔ Enable DNS hostnames
- ✔ Enable DNS resolution
- ✔ Verifying VPC creation: [vpc-0020e85914e027c73](#) 
- ✔ Create subnet: [subnet-055e5520f856a920b](#) 
- ✔ Create internet gateway: [igw-0d0a1b4b81cc8d971](#) 
- ✔ Attach internet gateway to the VPC
- ✔ Create route table: [rtb-0e3a1b9e47c073526](#) 
- ✔ Create route
- ✔ Associate route table
- ✔ Verifying route table creation

2) Creating EC2 attached to the vpc

Name

Apcachi_server_1

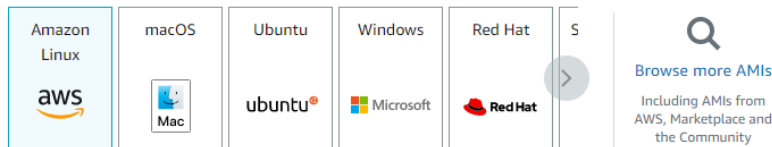
[Add additional tags](#)

▼ 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

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

Quick Start



Amazon Machine Image (AMI)

Amazon Linux 2 AMI (HVM) - Kernel 5.10, SSD Volume Type

Free tier eligible

Key pair name - required

EC2

[Create new key pair](#)

▼ Network settings [Info](#)

VPC - required [Info](#)

vpc-0020e85914e027c73 (project-vpc)
10.0.0.0/16

Subnet [Info](#)

subnet-055e5520f856a920b project-subnet-public1-us-east-1a
VPC: vpc-0020e85914e027c73 Owner: 422097883691
Availability Zone: us-east-1a IP addresses available: 251 CIDR: 10.0.0.0/24

Auto-assign public IP [Info](#)

Enable

Inbound security groups rules

▼ Security group rule 1 (TCP, 22, 0.0.0.0/0)

[Remove](#)

Type [Info](#)

ssh

Protocol [Info](#)

TCP

Port range [Info](#)

22

Source type [Info](#)

Anywhere

Source [Info](#)

[Add CIDR, prefix list or security](#)

0.0.0.0/0

Description - optional [Info](#)

e.g. SSH for admin desktop

▼ Security group rule 2 (TCP, 80, 0.0.0.0/0)

[Remove](#)

Type [Info](#)

HTTP

Protocol [Info](#)

TCP

Port range [Info](#)

80

Source type [Info](#)

Anywhere

Source [Info](#)

[Add CIDR, prefix list or security](#)

Description - optional [Info](#)

e.g. SSH for admin desktop

3) To install apache without while creating Ec2

User data Info

```
#!/bin/bash
yum update -y
yum install -y httpd.x86_64
systemctl start httpd.service
systemctl enable httpd.service
```

4) accessing Ec2

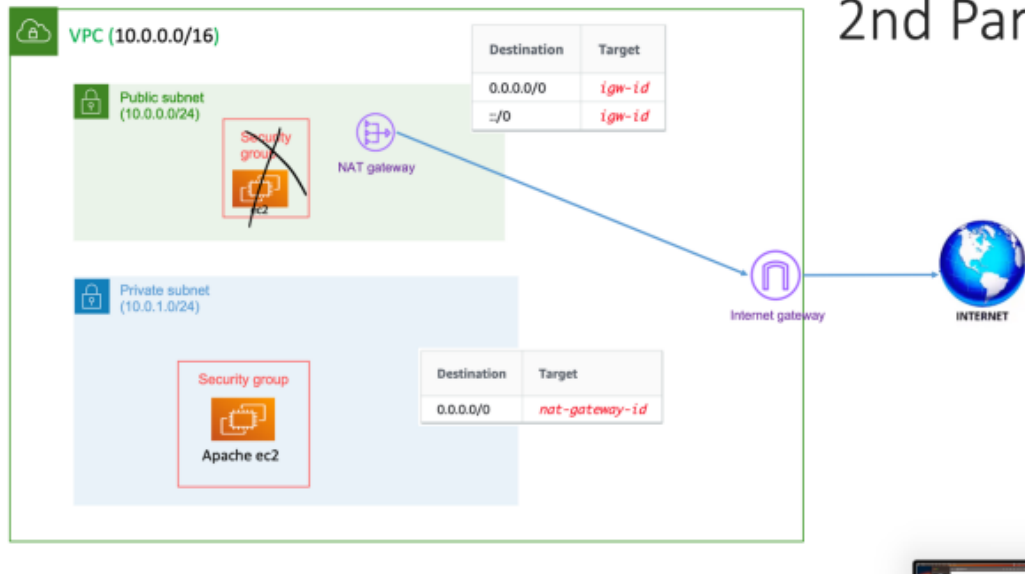
The screenshot displays the AWS Management Console interface. On the left, the 'Instance summary' for 'i-091db525518d8607b' (Apcachi_server_1) is shown. The instance is in a 'Running' state. Key details include: Public IPv4 address 44.203.197.80, Private IPv4 address 10.0.0.234, and Hostname type IP name: ip-10-0-0-234.ec2.internal. On the right, a 'Test Page' is displayed with a red header. The page contains text explaining its purpose: 'This page is used to test the proper operation of the Apache HTTP server after it has been installed. If you can read this page, it means that the Apache HTTP server installed at this site is working properly.' It also provides instructions for general public and website administrators, and features the 'Powered by APACHE 2.4' logo.

Logs:

```
[ 27.158771] cloud-init[3241]: Verifying : httpd-2.4.54-1.amzn2.x86_64 5/9
[ 27.979445] cloud-init[3241]: Verifying : mailcap-2.1.41-2.amzn2.noarch 6/9
[ 27.994750] cloud-init[3241]: Verifying : generic-logos-httpd-18.0.0-4.amzn2.noarch 7/9
[ 28.024607] cloud-init[3241]: Verifying : httpd-filesystem-2.4.54-1.amzn2.noarch 8/9
[ 28.122635] cloud-init[3241]: Verifying : apr-1.7.0-9.amzn2.x86_64 9/9
[ 28.136596] cloud-init[3241]: Installed:
[ 28.152556] cloud-init[3241]: httpd.x86_64 0:2.4.54-1.amzn2
[ 28.156241] cloud-init[3241]: Dependency Installed:
[ 28.168236] cloud-init[3241]: apr.x86_64 0:1.7.0-9.amzn2
[ 28.180238] cloud-init[3241]: apr-util.x86_64 0:1.6.1-5.amzn2.0.2
[ 28.192236] cloud-init[3241]: apr-util-bdb.x86_64 0:1.6.1-5.amzn2.0.2
[ 28.208557] cloud-init[3241]: generic-logos-httpd.noarch 0:18.0.0-4.amzn2
[ 28.216235] cloud-init[3241]: httpd-filesystem.noarch 0:2.4.54-1.amzn2
[ 28.228261] cloud-init[3241]: httpd-tools.x86_64 0:2.4.54-1.amzn2
[ 28.240813] cloud-init[3241]: mailcap.noarch 0:2.1.41-2.amzn2
[ 28.252559] cloud-init[3241]: mod_http2.x86_64 0:1.15.19-1.amzn2.0.1
[ 28.771341] xfs filesystem being remounted at /tmp supports timestamps until 2038 (0x7fffffff)
[ 28.777177] cloud-init[3241]: Complete!
[ 28.791092] xfs filesystem being remounted at /var/tmp supports timestamps until 2038 (0x7fffffff)
[ 28.378645] cloud-init[3241]: Created symlink from /etc/systemd/system/multi-user.target.wants/httpd.service to /usr/lib/systemd/system/httpd.servi
```

2-

2nd Part



Required:

Screenshot from the instance page demonstrate that the instance is private and a screenshot from the logs of the instance demonstrate the apache2 is installed (you don't need to do the public ec2 so I made a mark on it)

1) Create vpc , public subnet and private subnet:

<input type="checkbox"/>	Name	VPC ID	State	IPv4 CIDR	IPv6 CIDR
<input type="checkbox"/>	Alsafa_vpc	vpc-094af64079c05ed38	Available	10.0.0.0/16	–
<input type="checkbox"/>	–	vpc-0b92a5634ea5f6681	Available	172.31.0.0/16	–

<input type="checkbox"/>	Name	Subnet ID	State	VPC	IPv4 CIDR
<input type="checkbox"/>	my_public_subnet	subnet-0c62c4ba05df50b19	Available	vpc-094af64079c05ed38 Als...	10.0.0.0/24
<input type="checkbox"/>	my_private_subnet	subnet-06fcb7e16cf4b6614	Available	vpc-094af64079c05ed38 Als...	10.0.1.0/24

2) Create Internet gateway and attach it to vpc , Route table , and NAT gateway

VPC > Internet gateways > igw-08cfd0ba70742d093

igw-08cfd0ba70742d093 / alsafa_GW

Details info

Internet gateway ID igw-08cfd0ba70742d093	State Attached	VPC ID vpc-094af64079c05ed38 Alsafa_vpc	Owner 422097883691
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Tags

Key	Value
Name	alsafa_GW

VPC > NAT gateways > nat-08793a7d0abb787f4

nat-08793a7d0abb787f4 / Alsafa_NAT

Details info

NAT gateway ID nat-08793a7d0abb787f4	Connectivity type Public	State Available	State message Info
NAT gateway ARN arn:aws:ec2:us-east-1:422097883691:natgateway/nat-08793a7d0abb787f4	Elastic IP address 34.237.206.123	Primary private IPv4 address 10.0.0.214	Network interface ID eni-0fc6c11d802305933
VPC vpc-094af64079c05ed38 / Alsafa_vpc	Subnet subnet-0c62c4ba05df50b19 / my_public_subnet	Created Sunday, December 25, 2022 at 22:43:52 GMT+2	Deleted –

Puplic subnet route table:

Updated routes for rtb-0fa995eca2b3ba9b4 / my_route_table_public successfully

Details

Route table ID
rtb-0fa995eca2b3ba9b4

Main
No

Explicit subnet associations
subnet-0c62c4ba05df50b19 / my_public_subnet

Edge associations
-

VPC
vpc-094af64079c05ed38 | Alsafa_vpc

Owner ID
422097883691

Routes

Subnet associations

Edge associations

Route propagation

Tags

Routes (2)

Edit routes

Filter routes

Both

< 1 >

Destination	Target	Status	Propagated
0.0.0.0/0	igw-08cfd0ba70742d093	Active	No

Private subnet route table:

Details Info

Route table ID
rtb-0a0616a7650bf1c7e

Main
No

Explicit subnet associations
subnet-06fcb7e16cf4b6614 / my_private_subnet

Edge associations
-

VPC
vpc-094af64079c05ed38 | Alsafa_vpc

Owner ID
422097883691

Routes

Subnet associations

Edge associations

Route propagation

Tags

Routes (2)

Edit routes

Filter routes

Both

< 1 >

Destination	Target	Status	Propagated
0.0.0.0/0	nat-08793a7d0abb787f4	Active	No
10.0.0.0/16	local	Active	No

3) Create instance in private subnet

Instance summary for i-067c35711856e076e (My_apachi_server) [Info](#)
Updated less than a minute ago

🔄

Connect

Instance state ▼

Actions ▼

Instance ID 🔗 i-067c35711856e076e (My_apachi_server)	Public IPv4 address -	Private IPv4 addresses 🔗 10.0.1.226
IPv6 address -	Instance state 🟢 Running	Public IPv4 DNS -
Hostname type IP name: ip-10-0-1-226.ec2.internal	Private IP DNS name (IPv4 only) 🔗 ip-10-0-1-226.ec2.internal	Elastic IP addresses -
Answer private resource DNS name IPv4 (A)	Instance type t2.micro	AWS Compute Optimizer finding 🔔 Opt-in to AWS Compute Optimizer for recommendations. Learn more
Auto-assigned IP address -	VPC ID 🔗 vpc-094af64079c05ed38 (Alsaafa_vpc)	Auto Scaling Group name -
IAM Role -	Subnet ID 🔗 subnet-06fcb7e16cf4b6614 (my_private_subnet)	

```
[ 27.953894] cloud-init[3243]: --> Package apr-util-bdb.x86_64 0:1.6.1-5.amzn2.0.2 will be installed
[ 28.300977] cloud-init[3243]: --> Finished Dependency Resolution
[ 28.334853] cloud-init[3243]: Dependencies Resolved
[ 28.340457] cloud-init[3243]: =====
[ 28.349091] cloud-init[3243]: Package           Arch      Version           Repository        Size
[ 28.355912] cloud-init[3243]: =====
[ 28.362884] cloud-init[3243]: Installing:
[ 28.366458] cloud-init[3243]: httpd                x86_64     2.4.54-1.amzn2    amzn2-core       1.4 M
[ 28.372762] cloud-init[3243]: Installing for dependencies:
[ 28.376455] cloud-init[3243]: apr                x86_64     1.7.0-9.amzn2     amzn2-core       122 k
[ 28.382348] cloud-init[3243]: apr-util           x86_64     1.6.1-5.amzn2.0.2 amzn2-core       99 k
[ 28.389176] cloud-init[3243]: apr-util-bdb       x86_64     1.6.1-5.amzn2.0.2 amzn2-core       19 k
[ 28.395419] cloud-init[3243]: generic-logos-httpd noarch     18.0.0-4.amzn2    amzn2-core       19 k
[ 28.401877] cloud-init[3243]: httpd-filesystem   noarch     2.4.54-1.amzn2    amzn2-core       24 k
[ 28.409634] cloud-init[3243]: httpd-tools        x86_64     2.4.54-1.amzn2    amzn2-core       88 k
[ 28.415315] cloud-init[3243]: mailcap             noarch     2.1.41-2.amzn2    amzn2-core       31 k
[ 28.422790] cloud-init[3243]: mod_http2          x86_64     1.15.19-1.amzn2.0.1 amzn2-core       149 k
[ 28.429550] cloud-init[3243]: Transaction Summary
[ 28.433037] cloud-init[3243]: =====
[ 28.440601] cloud-init[3243]: Install 1 Package (+8 Dependent packages)
```