

LAB 3.1

Q1: routes of auto mode vpc

ud salma youssef project vpc

VPC network details EDIT DELETE VPC NETWORK

Filter Enter property name or value

	Name ↑	Description	Destination IP range	Priority	Instance tags	Next hop
	default-route-0c9bc180708d5836	Default local route to the subnetwork 10.200.0.0/20.	10.200.0.0/20	0	None	Virtual network auto-vpc
	default-route-1a7d5313910ed505	Default local route to the subnetwork 10.174.0.0/20.	10.174.0.0/20	0	None	Virtual network auto-vpc
	default-route-204911e7014246dd	Default local route to the subnetwork 10.154.0.0/20.	10.154.0.0/20	0	None	Virtual network auto-vpc
	default-route-2aa4083c863721f5	Default local route to the subnetwork 10.150.0.0/20.	10.150.0.0/20	0	None	Virtual network auto-vpc
	default-route-2ad12272d687176	Default local route to the subnetwork 10.194.0.0/20.	10.194.0.0/20	0	None	Virtual network auto-vpc
	default-route-368981c2947d3ae5	Default local route to the subnetwork 10.206.0.0/20.	10.206.0.0/20	0	None	Virtual network auto-vpc
	default-route-36af79aab14edeb	Default local route to the subnetwork 10.160.0.0/20.	10.160.0.0/20	0	None	Virtual network auto-vpc
	default-route-3a31884f3b33461	Default local route to the subnetwork 10.178.0.0/20.	10.178.0.0/20	0	None	Virtual network auto-vpc
	default-route-45e49ad743291d9d	Default route to the Internet.	0.0.0.0/0	1000	None	Default internet gateway
	default-route-4852ac0573e6781	Default local route to the subnetwork 10.172.0.0/20.	10.172.0.0/20	0	None	Virtual network auto-vpc
	default-route-4b828c1f030756d	Default local route to the subnetwork 10.166.0.0/20.	10.166.0.0/20	0	None	Virtual network auto-vpc
	default-route-4c0f99ec02b64742	Default local route to the subnetwork 10.146.0.0/20.	10.146.0.0/20	0	None	Virtual network auto-vpc
	default-route-4ccb09695c5463e	Default local route to the subnetwork 10.180.0.0/20.	10.180.0.0/20	0	None	Virtual network auto-vpc
	default-route-4ce0771a27c00461	Default local route to the subnetwork 10.148.0.0/20.	10.148.0.0/20	0	None	Virtual network auto-vpc
	default-route-5ba6d9239a3941ba	Default local route to the subnetwork 10.182.0.0/20.	10.182.0.0/20	0	None	Virtual network auto-vpc
	default-route-6297eb440153c0ec	Default local route to the subnetwork 10.140.0.0/20.	10.140.0.0/20	0	None	Virtual network auto-vpc
	default-route-71a09350fc445db2	Default local route to the subnetwork 10.192.0.0/20.	10.192.0.0/20	0	None	Virtual network auto-vpc
	default-route-7374c1d2a151c97d	Default local route to the subnetwork 10.184.0.0/20.	10.184.0.0/20	0	None	Virtual network auto-vpc
	default-route-773b3bbe936102f1	Default local route to the subnetwork 10.162.0.0/20.	10.162.0.0/20	0	None	Virtual network auto-vpc
	default-route-86674f9a4ec4603f	Default local route to the subnetwork 10.158.0.0/20.	10.158.0.0/20	0	None	Virtual network auto-vpc
	default-route-8c2ecb7c481e4d9c	Default local route to the subnetwork 10.156.0.0/20.	10.156.0.0/20	0	None	Virtual network auto-vpc
	default-route-9740779f30b9441d	Default local route to the subnetwork 10.188.0.0/20.	10.188.0.0/20	0	None	Virtual network auto-vpc
	default-route-a4518a3b2169c02a	Default local route to the subnetwork 10.128.0.0/20.	10.128.0.0/20	0	None	Virtual network auto-vpc
	default-route-a820b47f2115389b	Default local route to the subnetwork 10.190.0.0/20.	10.190.0.0/20	0	None	Virtual network auto-vpc
	default-route-b939731454d1c1fb	Default local route to the subnetwork 10.186.0.0/20.	10.186.0.0/20	0	None	Virtual network auto-vpc
	default-route-be4ba33b7ec1ba18	Default local route to the subnetwork 10.138.0.0/20.	10.138.0.0/20	0	None	Virtual network auto-vpc
	default-route-c3956045942a77f6	Default local route to the subnetwork 10.142.0.0/20.	10.142.0.0/20	0	None	Virtual network auto-vpc
	default-route-cd512cd0a433ba5	Default local route to the subnetwork 10.152.0.0/20.	10.152.0.0/20	0	None	Virtual network auto-vpc
	default-route-c8623e758c53cf0	Default local route to the subnetwork 10.132.0.0/20.	10.132.0.0/20	0	None	Virtual network auto-vpc
	default-route-c94385f0b1d62782	Default local route to the subnetwork 10.202.0.0/20.	10.202.0.0/20	0	None	Virtual network auto-vpc
	default-route-cbb1e420d46757e	Default local route to the subnetwork 10.204.0.0/20.	10.204.0.0/20	0	None	Virtual network auto-vpc
	default-route-d0470b05a2372ec	Default local route to the subnetwork 10.164.0.0/20.	10.164.0.0/20	0	None	Virtual network auto-vpc
	default-route-e4b6f275292ba1fa	Default local route to the subnetwork 10.170.0.0/20.	10.170.0.0/20	0	None	Virtual network auto-vpc
	default-route-ea108060f111d4ab	Default local route to the subnetwork 10.208.0.0/20.	10.208.0.0/20	0	None	Virtual network auto-vpc
	default-route-f234334b3e7e9baf	Default local route to the subnetwork 10.198.0.0/20.	10.198.0.0/20	0	None	Virtual network auto-vpc
	default-route-fee13c92314447de	Default local route to the subnetwork 10.168.0.0/20.	10.168.0.0/20	0	None	Virtual network auto-vpc

No, none of them can be deleted.

Q2: routes of custom mode vpc

ENABLE API

None

Maximum transmission unit

1460

<

SUBNETS

STATIC INTERNAL IP ADDRESSES

FIREWALLS

ROUTES

VPC NETWORK PEERING

PRIVATE SERVICE CONNECTION

>

ADD ROUTE

DELETE

Filter

Enter property name or value

<input type="checkbox"/>	Name ↑	Description	Destination IP range	Priority	Instance tags	Next hop
<input type="checkbox"/>	default-route-36dcfb42c803073c	Default local route to the subnetwork 10.0.0.0/24.	10.0.0.0/24	0	None	Virtual network custom-vpc-01
<input type="checkbox"/>	default-route-7ff2fe505287a0d9	Default local route to the subnetwork 10.0.1.0/24.	10.0.1.0/24	0	None	Virtual network custom-vpc-01
<input type="checkbox"/>	default-route-f8897aaddb38c2ae	Default route to the Internet.	0.0.0.0/0	1000	None	Default internet gateway

[EQUIVALENT REST](#)

Q3:
by deleting the default route of the internet.

Q4:
creating NAT

salma youssef project ▼

nat



 Search



Create Cloud NAT gateway

Cloud NAT lets your VM instances and container pods communicate with the internet using a shared, public IP address.

Cloud NAT uses Cloud NAT gateway to manage those connections. Cloud NAT gateway is region and VPC network specific. If you have VM instances in multiple regions, you'll need to create a Cloud NAT gateway for each region. [Learn more](#)

Gateway name *

custom-nat



Lowercase letters, numbers, hyphens allowed

Select Cloud Router

Network *

custom-vpc-01



Region *

us-east1 (South Carolina)



One subnet.

create a router:

Create a router

Google Cloud Router dynamically exchanges routes between your Virtual Private Cloud (VPC) and on-premises networks by using Border Gateway Protocol (BGP)

Name *

nat-router

Lowercase letters, numbers, hyphens allowed

Description

Network *

custom-vpc-01

Region *

us-east1 (South Carolina)

BGP peer keepalive interval

seconds

CREATE

CANCEL

← Create Cloud NAT gateway

Cloud Router *

nat-router ▼ ?

Cloud NAT mapping ?

Source (internal)

Custom ▼ ?

Select which subnets to map to the Cloud NAT gateway. Primary IP addresses are used by VM instances and secondary IP addresses are used by container pods. [Learn more](#)

Subnets

Subnet name 1

subnet-1 (10.0.0.0/24) ▼

IP ranges 1 *

Selected: all ▼

[+ ADD SUBNET AND IP RANGE](#)

All VMs from selected subnet IP ranges will be able to communicate with Internet

Cloud NAT IP addresses

Automatic (recommended) ▼ ?

Destination (external)

LAB 3.2

Q1:
create HTTP(S) LB:

frontend:

salma yousef project

load balancing

Search

50

S

← New HTTP(S) load balancer

HELP ASSISTANT

Name *

nginx-lb

Lowercase, no spaces.

Frontend configuration

Backend configuration

Routing rules

Review and finalize (optional)

DESCRIPTION

Protocol

HTTP

Select HTTPS to support clients that support HTTP/2. The load balancer automatically offers HTTP/2 as part of the TLS handshake.

Network Service Tier

Premium

Global HTTP(S) load balancing only supports the Premium Network Service tier. [More information](#)

IP version

IPv4

IP address

Ephemeral

Port

80

Global HTTP load balancing supports TCP ports 80 and 8080. [More information](#)

CREATE

CANCEL

backend:

salma yousef project

load balancing

← New HTTP(S) load balancer

Name *

nginx-lb

Lowercase, no spaces.

✓ Frontend configuration

✓ Backend configuration

• Routing rules

ⓘ Review and finalize (optional)

CREATE

CANCEL

Create backend service

Backends

Regions

us-east1

New backend

Instance group *

instance-group-nginx

Port numbers *

80

Balancing mode ?

Utilization

Rate

Maximum backend utilization *

80

% ?

CREATE

CANCEL

health check:

Health Check

Name *

nginx-health-ckeck

Lowercase, no spaces.

Description

Protocol

TCP

Port *

80

Proxy protocol

NONE

Request

Response

Logs

On

Off

Turning on Health check logs can increase costs in Logging.

SAVE

CANCEL

salma yousef project

Search (/) for resources, docs, products, an...

Search

50

S

allow-http

Logs ?

Off

[view in Logs Explorer](#)

Network

custom-vpc-01

Priority

1000

Direction

Ingress

Action on match

Allow

Source filters

IP ranges0.0.0.0/0

Protocols and ports

tcp:80

Enforcement

Updating firewall rule "allow-http"...

all the instances of LB are healthy

salma yousef project

load balancing

×

Search

50

S

← Load balancer details

EDIT

DELETE

All unmatched (default)

All unmatched (default)

nginx-backecdd-service

Backend

Backend services

1. nginx-backecdd-service

Endpoint protocol

Named port

Timeout

Health check

Cloud CDN

Logging

HTTPhttp30 seconds[nginx-health-ckeck](#)Enabled

[VIEW CDN DETAILS](#)

Disabled

ADVANCED CONFIGURATIONS

Name ↑	Type	Scope	Healthy	Autoscaling	Balancing mode	Selected ports ?	Capacity
instance-group-nginx	Instance group	us-east1	✔ 3 of 3	On: Target CPU utilization 60%	Max backend utilization: 80%	80	100%

Cloud

salma youssef project

load

X

Search

50

services

Load balancing

+ CREATE LOAD BALANCER

REFRESH

DELETE

HELP

LOAD BALANCERS

BACKENDS

FRONTENDS

Faster web performance and improved web protection with Cloud CDN and Cloud Armor. [Learn more](#)

Filter

Enter property name or value

Name

Load balancer type

↑

Protocols

Region

Backends

[nginx-lb](#)

HTTP(S)

HTTP

1 backend service (1 instance group, 0 network endpoint groups)

To view or delete load balancing resources like forwarding rules and target proxies, go to the [load balancing components view](#).

Q2:

LAB 3.3

Q1: