Lab 8: Cloud computing architecture, achieve high availibility

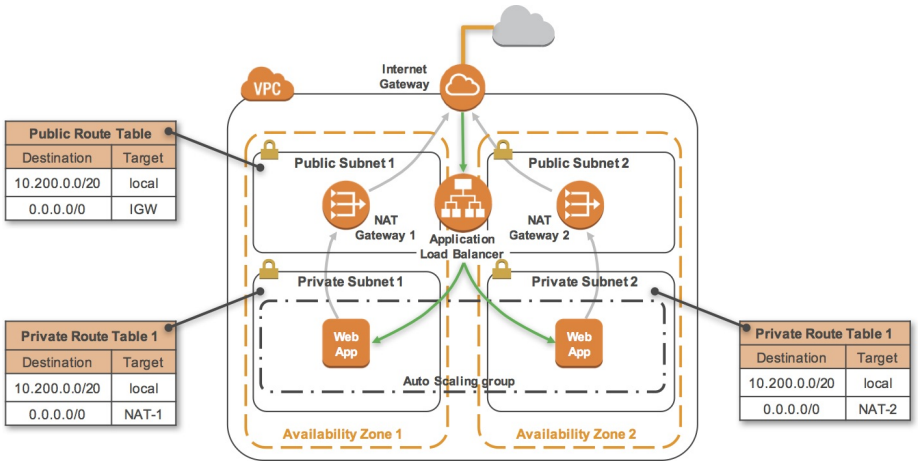
December 10, 2018

1 Start

Start with a VPC, a public and private subnet in one AZI. An internet Gateway in the public subnet. An instance ec2 in the public subnet. VPC: CIDR: 10.200.0.0/20 (IP from 10.200.0.0 to 10.200.15.255)˙ Also attached a route table and network ACL.
Public Subnet 1 exists in the labVPC CIDR: 10.200.0.0/24 (this subnet includes 256 IP, adresses, 5 are used).
Private Subnet 1 exists in the labVPC CIDR:10.200.2.0/23 (this includes 512 IP)

Destination	Target
10.200.0.0/20	local
0.0.0.0/0	igw-000b7b3bac47f8f54

Internet Gateway is associated with the labVPC, in the description tab, can see: IP adresses, AZI, subnet, VPC and security group here, the public IP of the instance is 34.229.114.202



2 Connect to the instance

First, set the correct file permission for the file keys: chmod 400 KEYPAIR.pem.
Then, use the ssh command: ssh -i KEYPAIR.pem ec2-user@EC2PublicIP

3 Download, install and launch a web server php application

sudo yum -y update (to update)
sudo yum -y install httpd php (to create a web server, apache web server)
sudo chkconfig httpd on (to configure Apache to automatically starts)
enter the ip in a browser to see the website, then, exit to end the ssh session

4 Create an Amazon Machine Image (AMI)

Action, create a web image

5 Configure a second availibility zone

create a second Public Subnet
create a second Private Subnet
create a second NAT GATEWAY
create a second private route table
Public subnet 1: us-east-1a (use1-az6)

make a Public subnet 2: us*east-1b
IPv4 CIDR: 10.200.1.0/24 (subnet id: subnet-08fd105fd822eab11)
route table of the public subnet, edit route table association
try a route table to have igw as target

first NAT gateway ID: nat-0110e4601de78af7c
second NAT gateway ID: nat-0d5163cbeba4692e9

6 Create a second private subnet

7 Create a second i NAT Gateway

A nat gateway (network adress translation) is to route intenet bound traffic through nat gateway for subnet, enter the subnet id from Public subnet 2 create a new EIP (an elastic IP adress is a static IP address that will be assoicated with this NAT GATEway. An elastic IP adresses will remain unchanged over the life of the Nat Gateway

8 Create a seconde private route table

define how traffic flows into and out of a subnet. route table for private subnet 2 that sends internet bound traffic through the NAT gateway.
destination: 0.0.0.0/0

9 Create an application load balance

distribute requests across multiple amazon EC2 instances. under labVPC, then associated AZI 1 with public subnet 1 and AZ2 with public subnet 2

10 Create an auto scaling group

service designed to launch or terminate ec2 instances automatically auto scaling group for private subnets dns of the load balancer
LB1-539588647.us-east-1.elb.amazonaws.com