Hands-on Route 53- 02

Purpose of the this hands-on training is to creating a DNS record sets and implement Route 53 routing policies.

Learning Outcomes

At the end of the this hands-on training, students will be able to;

1. Create record sets

2. Manage the domain name routing

3. Implement routing policies in different use case

- use active-passive architecture in local vpc

Outline

- Part 1 - Prep.

- Part 2 - Creating a fail-over routing policies

- Part 3 - Creating a geolocation routing policies

- Part 4- Creating Private Hosted Zone and records

Part 1 - Part 1 - Prep.

STEP 1: Create Sec.Group:

```
Route 53 Sec: In bound : "SSH 22, HTTP 80  > anywhere(0:/00000)"
```

STEP 2: Create Instances:

- We'll totally create "4 Linux" instances and "1 Windows" instance.

1. Create EC2 in default VPC as named "N.virginia"

```
Region: "N.Virginia"
VPC: Default VPC
Subnet: PublicA
Sec Group: "Route 53 Sec"
```

- user data:

```bash
#!/bin/bash
yum update -y
yum install -y httpd
yum install -y wget
cd /var/www/html
wget https://raw.githubusercontent.com/techproedu/norhvirginia/main/index.html
wget
https://raw.githubusercontent.com/techproedu/norhvirginia/main/northvirginia.gif
systemctl start httpd
systemctl enable httpd
```

2. Create EC2 in default VPC as named "Tokyo"

```
Region: "N.Virginia"
VPC: Default VPC
Subnet: PublicA
Sec Group: "Route 53 Sec"
```

- user data:

```bash
#!/bin/bash
yum update -y
yum install -y httpd
yum install -y wget
cd /var/www/html
wget https://raw.githubusercontent.com/techproedu/tokyo/main/index.html
wget https://raw.githubusercontent.com/techproedu/tokyo/main/tokyo.jpg
systemctl start httpd
systemctl enable httpd
```

3. Create EC2 in default VPC as named "Paris"

```
Region: "N.Virginia"
VPC: Default VPC
Subnet: PublicA
Sec Group: "Route 53 Sec"
```

- user data:

```bash
#!/bin/bash
yum update -y
yum install -y httpd
yum install -y wget
```

```
cd /var/www/html
wget https://raw.githubusercontent.com/techproedu/paris/main/index.html
wget https://raw.githubusercontent.com/techproedu/paris/main/paris.jpg
systemctl start httpd
systemctl enable httpd
```

4. Create EC2 in "myVPC" named "Local"

```
Region: "N.Virginia"
VPC: myVPC
Subnet: PublicA
Sec Group: ssh-http---->0.0.0.0/0

user data:

#!/bin/bash
yum update -y
yum install -y httpd
yum install -y wget
chkconfig httpd on
cd /var/www/html
wget https://raw.githubusercontent.com/techproedu/local/main/index.html
wget https://raw.githubusercontent.com/techproedu/local/main/local.jpg
service httpd start
systemctl enable httpd
```

4. Create "Windows" instance in "myVPC" named "Windows"

```
Region: "N.Virginia"
VPC: myVPC
Subnet: PublicA
Sec Group: RDP---->0.0.0.0/0
```

STEP 3: Create a Static WebSite Hosting :

1. Create Static WebSite Hosting-1/ "www.[your sub-domain name].net"

- Go to S3 service and create a bucket with sub-domain name: "www.[your sub-domain name].net"
- Public Access "Enabled"
- Upload Files named "index.html" and "error.jpg" in "s3.bucket.www" folder
- Permissions>>> Bucket Policy >>> Paste bucket Policy

```
{
    "Version": "2012-10-17",
    "Statement": [
```

```
        {
            "Sid": "PublicReadGetObject",
            "Effect": "Allow",
            "Principal": "*",
            "Action": "s3:GetObject",
            "Resource": "arn:aws:s3:::don't forget to change me/*"
        }
    ]
}
```

- Properties>>> Set Static Web Site >>> Enable >>> Index document : index.html

Part 2 - Creating a fail-over routing policies

STEP 1 : Create health check for "N. Virginia_1" instance

- Go to left hand pane and click the Health check menu

- Click Health check button

- Configure Health Check

```
1. Name: firsthealthcheck

What to monitor     : Endpoint

Specify endpoint by : IP address

Protocol            : HTTP

IP address          : N.Virginia_1 IP address

Hostname:           : -

Port                : 80

Path                : leave it as /

Advance Configuration

Request Interval    :  Standard (30seconds)

Failure Threshold   : 3

Explain Response Time:

Failure = Time Interval * Threshold. If its a standard 30 seconds check then three
checks is actually equal to 90 seconds. So be careful of how these two different
settings interact each other.

String Matching     : No
```

```
    Latency Graphs:     : Keep it as is

    Invert Health Check Status: Keep it as is

    Disable Health Check:
    Explain: If you disable a health check, Route 53 considers the status of the
    health check to always be healthy. If you configured DNS failover, Route 53
    continues to route traffic to the corresponding resources. If you want to stop
    routing traffic to a resource, change the value of Invert health check status.

    Health Checker Regions: Keep it as default

    click Next

    Get Notification   : None

    click create and show that the status is unhealthy approximately after 90 seconds
    the instance healthcheck will turned into the "healthy" from "unhealthy"
```

Step 2: Create A record for "N. Virginia_1" instance IP - Primary record

- Got to the hosted zone and select the public hosted zone of our domain name

- Clear all teh record sets except NS and SOA

- Click create record

- select "Failover" as a routing policy

- click next

```
    Record Name :"www"
    Record Type : A
    TTL:"60"
    Value/Route traffic to :
      - "Ip address or another value depending on the record type"
        - enter IP IP address of N.Virginia_1
    Routing: "Failover"
    Failover record type    : Primary
    Health check            : firsthealthcheck
    Record ID               : Failover Scenario-primary
```

- click defined Failover record button

- select created failover record flag and push the create records button

Step 3: Create A record for S3 website endpoint - Secondary record

- Click create record

- select "Failover" as a routing policy

- click next

```
Record Name :"www"
Record Type : A
TTL:"60"
Value/Route traffic to :
  - "Alias to S3 website endpoint"
  - N.Virginia(us-east-1)
  - Choose your S3 bucket named "www.[your sub-domain name].net"
Routing: "Failover"
Failover record type     : Secondary
Health check             : keep it as is
Record ID                : Failover Scenario-secondary
```

- click define Failover record button

- select created failover record flag and push the create records button

- Go to browser and show the web page with N.Virginia_1 instance content

- Stop the N.Virginia_1 instance

- check the healtcheck status and wait until it appears as unhealthy

- go to the browser and show the web site content turned into S3 bucket content with the help of the failover record

Part 3 - Creating a Gelocation routing policies

STEP 1 :Create Geolocation record for Tokyo

- Click create record

- select "Geolocation" as a routing policy

- click next

```
Record Name :"geo"
Record Type : A
TTL:"60"
Value/Route traffic to :
  - "Ip address or another value depending on the record type"
    - "IP of Geo-Japon Instance"
Routing: "Geolocation"
Location                 :
  - Countries Tokyo
Health check             : Keep it as is
Record ID                : Geolocation Scenario-Tokyo
```

- click "define geolocation record" button

- select created Geolocation record flag and push the "create records" button

STEP 2 : Create geolocation record for Europe

- Click create record

- select "Geolocation" as a routing policy

- click next

```
Record Name :"geo"
Record Type : A
TTL:"60"
Value/Route traffic to :
  - "Ip address or another value depending on the record type"
    - "IP of Geo-Paris Instance"
Routing: "Geolocation "
Location                 :
  - Countinent : Europe
Health check             : Keep it as is
Record ID                : Geolocation Scenario-Europe
```

- click "define geolocation record" button

- select created Geolocation record flag and push the "create records" button

STEP 3 : Create geolocation record for others

- Click create record

- select "Geolocation" as a routing policy

- click next

```
Record Name :"geo"
Record Type : A
TTL:"60"
Value/Route traffic to :
  - "Ip address or another value depending on the record type"
    - "IP of N.Virginia"
Routing: "Geolocation"
Location                 : Select Default option
Health check             : Keep it as is
Record ID                : Geolocation Scenario-Others
```

- click "define geolocation record" button

- select created Geolocation record flag and push the "create records" button

- change the IP of your computer via VPN and see the Japon page.

- change the IP of your computer via VPN and see the Europe page.

- Send the DNS to students try for US and show them different web page based on location.

Part 4 - Creating Private Hosted Zone and DNS Records

STEP 1: Creating Private Hosted Zone

- go to the dashboard and click on "Hosted Zones"
- Click "Create Hosted Zone"

```
Domain name: the same name of your domain(devops.com)
Description: ---
Type        :Private hosted zone
VPCs to associate with the hosted zone
  Region : N.Virginia
  VPC ID : myVPC
Tags:---
```

- Click on "create Hosted Zone"

- Show that NS and SOA records automatically created.

STEP 2: Creating in A record with "wwww" in Private Hosted Zone

- Go to "PRIVATE" Hosted Zone
- Create A record in "PRIVATE" Hosted Zone

```
Record Name :"www"
Record Type : A
TTL:"60"
Value/Route traffic to :
  - "Ip address or another value depending on the record type"
    - enter IP IP address of "Local"
Routing: "Simple"
```

STEP 3: Creating in A record with "wwww" in Public Hosted Zone

- Go to "PUBLIC" Hosted Zone
- Create A record in "PUBLIC" Hosted Zone

```
Record Name :"www"
Record Type : A
TTL:"60"
Value/Route traffic to :
  - "Ip address or another value depending on the record type"
```

```
     - enter IP IP address of "N.Virginia"
  Routing: "Simple"
```

- go to "Window" instance and connect it with RDP
- open the Internet Explorer of "Window" instance
- type "www.techproeducation.com". show which content is seen "local instance content" in VPC
- go to the public browser than type browser: "www.techproeducation.com" than show that, N.Virginia instance is seen on public internet.

STEP 4: Cleaning

- Delete Instances.
- Delete bucket
- Delete A recordS If they exist.
- Delete the HEALTH CHECK