Practical:

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Services ----> Networking and content delivery ---> Route 53

**Step 1:** We need to buy a domain name.

Register domain

hello.com (unavailable)

sunil-test-t.com -- Add to cart -- Continue

Once you buy the domain,

We see the domain in dashboard -- Registered domain.

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Route53 helps the clients to handle the regional failures.

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Let’s make the setup ready

Select London region, create two webservers and attach to load balancer.

Select Sydney region, create one webserver and attach to load balancer.

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Select London region ---- Ec2 -- Launch instance

Amazon Linux --- Next – no. of instances 1 - advanced Details

#!/bin/bash

sudo su

yum update -y

yum install httpd -y

cd /var/www/html

echo "London-1" > index.html

service httpd start

chkconfig httpd on

Next -- Next -- Name tag - London-1 --Security group--

Create new Group - MyWebSG05

(Open SSH and HTTP)

Review and launch -- new key pair - mylondon05.pem -- launch.

Similarly, lets launch another webserver.

Amazon linux --- Next -- no of instance 1 - advanced Details

#!/bin/bash

sudo su

yum update -y

yum install httpd -y

cd /var/www/html

echo "London-2" > index.html

service httpd start

chkconfig httpd on

Next -- Next -- Name tag - London-2 --Security group -- Select existing

Group Name - MyWebSG9 (SSH and HTTP)

Review and launch -- choose existing key pair - mylondon13.pem -- launch.

View instances.

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Create load balancer -- Classic load balancer

Load Balancer Name: London-LB ----Next -- Select existing security group - MyWebSG05 --Next

Response Timeout - 2

Interval - 5

Unhealth threshold - 2

Healthy Threshold - 2

Next -- add EC2 -- Select both the instance -- Review -- create -- close

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Let’s Switch to Sydney region

Instances -- launch instance -- Amazon linux --- Next -- Step 3: Advanced Details

#!/bin/bash

sudo su

yum update -y

yum install httpd -y

cd /var/www/html

echo "Sydney1" > index.html

service httpd start

chkconfig httpd on

Next -- Next -- Name Tag: Sydney-1 -- Next -- New Security group: SydSG05

Description: SydSG05

Type Source

SSH Anywhere

HTTP Anywhere

Review and launch -- launch - New key pair: mysydney5.pem --- download -- launch

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Create load balancer --- Classic -- Load balancer Name: Syd-LB --

Next -- select existing security group (SydSG05) -- Next -- Step 4: Configure health check

Response Timeout - 2

Interval - 5

Unhealth threshold - 2

Healthy Threshold - 2

Next -- add EC2 -- Select the instance -- Review -- create -- close

Testing the load balancer

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Select London load balancer -- DNS name

try from browser (Works!!!)

Sydney Load balancer -- will also works (you may need to wait for 2 min)

We have to link the domain name to the load balancer DNS name. This linking of domain name to the load balancer DNS name is possible by using **simple routing policy**.

When we buy the domain, we get hosted zones

Both information we have in the dashboard.

Select the hosted zone (sunilcloud.co), we get **two records**

**NS** -- stands for name server.

**SOA** - stands for start of authority

We need to create a new record set - Alias Record

Create record set -- Name: www (just type www in the text box)

Alias - select yes (radio button)

Alias Target - Select London Load balancer DNS Name.

Routing policy - **Simple**

create.

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Now, test the domain (sunilcloud.com) in browser

It Works!!!

We have achieved 1st advantage.

Instead of providing difficult Load Balancer DNS name to public, we have provided user friendly domain name.

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Weighted - routing policy

Let’s delete the record set.

Create record set --- Name: www

Alias - select yes (radio button)

Alias Target - Select London Load balancer DNS Name

Routing policy - **Weighted**

Weight: 70

Set ID: London LB (It is just description)

Create.

Create another record set

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Create record set --- Name: www

Alias - select yes (radio button)

Alias Target - Select Sydney Load balancer DNS NAme

Routing policy - Weighted

Weight: 30

Set ID: Sydney LB (It is just description)

Create.

Test!!!!

Try to access domain from different IP address ( machine ) to get the region

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**Latency** - routing policy

Fastest delivery first. The content is delivered to the nearest location. For India we will get London, for Australia it is Sydney.

Let’s delete the two record sets, which we have created.

Create record set --- Name: www

Alias - select yes (radio button)

Alias Target - Select London Load balancer DNS Name

Routing policy - Latency

Region - eu-west-2 (Official Region of London. We get it from DNS name also)

RecordID: London LB (It is just description)

Create.

Create another record set

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Create record set --- Name: www

Alias - select yes (radio button)

Alias Target - Select Sydney Load balancer DNS Name

Routing policy - Latency

Region - ap-southeast-2 (Official Region of Sydney. We get it from DNS name also)

Set ID: Sydney LB (It is just description)

Create.

Test!!!!

We get London page, As London is near to us

If a user from Australia try to access domain,they get Sydney page.

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**Failover policy**

We declare two regions one as primary(active) other one as secondary (passive). Always the 100% traffic go to active region only. Because of any natural disaster if the active region infrastructure is lost, then the 100% traffic will be diverted to passive region. Regional synchronization should happen. No matter the content will be same.

It prevents the data lost.

Let’s delete the two record sets.

Let’s make London as primary region

Sydney as secondary region.

We need to create health checks for this policy.

Dashboard --- health checks -- create health check -- Name: London-HC

specify endpoint - Domain name

Domain name - provide DNS name of London load balancer

path - index.html (Route 53 will check the entry of the file index.html in LB)

Advanced configuration

Request Interval - Fast (10 Sec) (waiting for to get ping response)

Failure threshold - 1

Next --- Create health check.

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Go to hosted zones -- select the domain -- create record set

Create record set --- Name: www

Alias - select yes (radio button)

Alias Target - Select London Load balancer DNS Name

Routing policy - Failover

Failover record type - primary

Evaluate target Health - yes

Associate health check - yes

Health check to Associate - London-HC

Create.

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Create another record set

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Create record set --- Name: www

Alias - select yes (radio button)

Alias Target - Select Sydney Load balancer DNS Name

Routing policy - Failover

Failover record type - Secondary

Evaluate target Health - no

Associate health check - no

Create.

test!!!

We get London page, as it is primary.

Let’s simulate failure scenario

Let’s stop both the Ec2 machines in London region.

Now, access the domain, we should get Sydney page.

Let’s start the Ec2 machines, we should get London page.

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**Geolocation Policy**

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Look at the Typical requirement

Traffic from London should be routed to London.

Traffic from India should be routed to Sydney.

Let’s delete the two record sets.

Delete health check.

Go to hosted zones -- select the domain -- create record set

Create record set --- Name: www

Alias - select yes (radio button)

Alias Target - Select London Load balancer DNS Name

Routing policy - Geolocation

Location - United Kingdom (Location of the customers)

Set ID - LondonLB

Create.

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Create another record set --- Name: www

Alias - select yes (radio button)

Alias Target - Select Sydney Load balancer DNS Name

Routing policy - Geolocation

Location - India (Location of the customers)

Set ID - SydneyLB

Create.

test!!!

We get Sydney page (As traffic from India)

traffic from London, we get London page.

Requirement

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Traffic from India should be routed to Sydney.

Except India, traffic from other countries should be routed to London.

For this, in the first record set

Location - default.

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**Deletion process**

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Delete two record sets.

Delete health check if any.

Terminate EC2 machines of both the regions.

Delete Load balancers in both the regions.