ROUTE 53

* You can use route 53 to host a web application and website in aws.
* You can register a domain name in aws (or) migrate a domain to aws from outside with route 53.
* You can use route 53 with other aws resources like ec2, elb, beanstalk, s3 etc.
* These services will give an aws domain, when we configured our web application (or) website in it. With the help of route 53, you can change it to our custom domain name and redirect all the traffic to our custom domain name.
* You can also monitor your webserver with route 53. It sends requests to webserver for

Responses. If responses came it considers webserver healthy. If it doesn’t it states unhealthy.

* If you don’t have a domain, you can register with aws by providing details. Aws is integrated with ICANN.

REGISTER A NEW DOMAIN

**Go to route 53, select DNS management.**

**Click Register a domain.**

**Enter a domain name and check availability.**

**Choose Add to cart.**

**Choose no of years to register the domain, default-1(y).**

**Enter contact details of you.**

**Enter postal/zip code.**

**Click continue,**

**Enter an email for verification.**

**Review your info and click Continue purchase.**

* You can edit the contact info, extend the renewal period, disable (or) enable the renewal period even after the domain registration in aws console anytime.

CREATE A HOSTED ZONE

* Hosted zone stores info about your domains and sub-domains. It automatically creates ns records and SOA record while creating hosted zone. The NS record identifies the name servers you gave to registrars to route queries to route 53.
* We create record sets inside hosted zones to tell how to route traffic to our domain.
* Go to hosted zones,

**Click create hosted zone.**

**Enter domain name,**

**Select zone type (pub or pvt).**

**Click create.**

RECORD SETS

* After creating hosted zones, we create record sets to tell DNS how you want to route the traffic for that domain.
* We create record sets based on policies. There are 5 policies.
* Simple policy.
* Latency based policy.
* Weighted policy.
* Geolocation policy.
* Failover policy.
* **SIMPLE ROUTING POLICY** - It is used for single resource that performs given function such as webserver.

**Go to hosted zone,**

**Click create record set.**

**Type domain.**

**Select record type.**

**Alias = Yes (or) No.**

**Value = Public IP (or) target like elb, eb etc.**

**Routing Policy = Simple**

**Click, Create.**

* **LATENCY BASED POLICY** - It is used for low latency. If a user sends a request, latency policy will redirect it to nearest server to that region.

**Go to hosted zone.**

**Click create record set.**

**Type domain.**

**Select record type.**

**Alias = Yes (or) No.**

**Value = Public IP (or) target like elb, eb etc.**

**Routing Policy = Latency.**

**Region = Select region to redirect all the requests from this region to specific ec2 we mentioned above.**

**SET ID = Unique ID to identify**

**Assicoate health check = Yes (or) No.**

**Click, Create.**

* **GEOLOCATION POLICY** - Your server is getting requests from many countries (or) regions. If you want to redirect a specific country requests to specific region, we use geolocation policy.

**Go to hosted zone.**

**Click create record set.**

**Type domain.**

**Select record type.**

**Alias = Yes (or) No.**

**Value = Public ip (or) target like elb, eb, s3 etc.**

**Routing policy = Geolocation.**

**Select Country = it will route the entire traffic from this country to that server we mentioned above.**

**Associate health check = Yes (or) No.**

**Click, Create.**

* **FAILOVER POLICY** - It is used for secondary server. when an primary server is down (or) unhealthy. The traffic is routed to secondary server automatically.

**Go to hosted zone.**

**Click create record set.**

**Type domain.**

**Select record type.**

**Alias = Yes (or) No.**

**Value = Public ip (or) target like elb, eb, s3 etc.**

**Routing policy = Failover.**

**Failover record type = Primary.**

**SET ID = Unique name to identify server.**

**Associate health check = Yes (or) No.**

**Click, Create.**

**Go to hosted zone.**

**Click create record set.**

**Type domain.**

**Select record type.**

**Alias = Yes (or) No.**

**Value = Public ip (or) target like elb, eb, s3 etc.**

**Routing policy = Failover.**

**Failover record type = Secondary.**

**SET ID = Unique name to identify server.**

**Associate health check = Yes (or) No.**

**Click, Create.**

* **WEIGHTED POLICY** - If you have two instances (or) more, it is used to share the load based on our requirements. we have to mention the percentage of load to split across instances.

**Go to hosted zone.**

**Click create record set**.

**Type domain.**

**Select create record set**.

**Alias = Yes (or) No**.

**Value = Ip (or) target**.

**Routing Policy = Weighted**.

**Weight = Number (how much load to send to this server)**.

**SET ID = Unique name to identify server**.

**Click, Create**.

* Create and configure another weighted record set for another server to share the load between them just as above and mention the load.

HEALTH CHECKS

* Route 53 health checks used to monitor web servers, status of cloud watch alarm and status of other health checks.
* You can monitor your web server either by ip (or) by domain name.
* After creating health checks, we get status of health checks, get notifications when status changes and configure dns failover.
* To receive notifications regarding health checks, you have to create alarm for each health check.

MONITOR ENDPOINT

* In health console, select **ENDPOINT** to monitor and select type **IP** (or) **DOMAIN**.
* If you select **IP**. Select the following.

**Protocol** = http, https, tcp.

**Ip address** = ip adr of the endpoint.

**Host name** = Host name of endpoint.

**Port** = select port based on protocol you selected above.

**Path** = Path-to-ping (route53 pings this url to define whether endpoint is healthy or not).

* If you select **DOMAIN NAME**. Select the following.

**Protocol** = http, https, tcp.

**Domain name** = name of endpoint.

**Port** = select port based on protocol you selected above.

**Path** = path-to-ping.

* Click **advanced configuration**,

**Request Interval** = 30 (or) 10 Sec (the time b/w route53 sends request to endpoint).

**Failed Threshold** = no of times (No of failed checks to define an endpoint unhealthy).

**String Matching** = Yes (or) No (If you specify string, route53 checks that string and if it’s there route53 consider the endpoint healthy, if not it considers unhealthy).

**Latency Graphs** = route53 measures the latency b/w health checks in diff regions and displays in latency tab in health check console. Once you specified the latency graph, you can’t change the setting.

**Invert Health Check Status** = If you choose this option, route 53 shows your healthy endpoint unhealthy and vice versa.

* Click **Next,**

**Create alarm** = Yes (or) No (to get notifications when health check status changed).

* If you select yes, select **existing topic** (or) **create new topic** and give email to get notifications.
* Click, **CREATE HEALTH CHECK**.

MONITOR OTHER HEALTH CHECKS

* Go to health check console. Select other health checks to monitor.

**Health Checks to Monitor** = Select your health check to monitor.

**Report when =** 1 (or) more health checks are healthy, all health checks are healthy.

* It will specify health check as healthy based on the above setting we specify.
* Select alarm and select invert health checks if you want and click create.

MONITOR CLOUDWATCH ALARM

* Go to health check console,

**Select monitor cloud watch alarm.**

**Region** = Select the region where you alarm resides.

**Alarm** = Select your alarm from the selected region.

**Select alarm to get notified.**

**Select invert if you want.**

**Click Create.**