


Route53

- Why AWS named it as Route53 ?
- DNS system or server works on TCP port 53 .  
Hence they have put its name as Route53. In US the most busy road in Highway 53 as well .  
Route53 provide Generic( .net , .com , .io , .org , .edu , )and geographical domains . ( .in , .pk ) . You can create maximum 500 hosted zones and In one zone 10000 resource requests can be setup .
- Route 53 is Global service . It supports IPV6 .
- How does DNS works?
- Recursive DNS servers are like workers whose job is to find the IP address of the domain name typed by the user. It is possible that our ISP has a recursive server for us and mapping request firstly hits this server. If it has a cache for the mapping it can revert the IP address otherwise it will check with Authoritative servers hierarchy. The authoritative server is the actual server holding the mapping of domain names to IPs. The recursive server hits the root server (13 in the world) first and the root server returns the IP of the TLD server( .com , .org , .in etc). TLD then returns the IP of the final authoritative server which holds the mapping.

- Domain name Registrar:::
- Route53 is a domain name registrar just as Go daddy . You can transfer domain made on go daddy to route53 AWS . You can migrate the DNS registry from Go Daddy to AWS Route53.  
[Katariasoft.com](http://Katariasoft.com) , [katariasoft.in](http://katariasoft.in) , [katariasoft.org](http://katariasoft.org) are different . You have to purchase all and their information is stored in different root servers . You can own all . You can purchase domain name via AWS and pay annually just as Go Daddy .
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- Registering static IP with Go Daddy:::
- Route53 Registers the AWS static IP of your server on which traffic of your registered domain should come . In case if that IP goes down then it can update other IP with GoDaddy as well . You need to register 4 AWS name servers in Go daddy . If you have purchased domain name from AWS then hosted zones are created automatically but if you purchase it outside then you have to create hosted zones manually . We have to update AWS hosted zone servers into go daddy .
- Health Monitoring :::
- It also monitors the health check of the server whose IP is registered for the DNS . It continuously sends request to check availability and health of the server whose IP is mapped to DNS with Go daddy or AWS .
- You can setup notification if some resource

connected with Route53 is down .

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- Route53 Routing Policies:::
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- Simple Routing ::: It means Just map the domain name with the IP address .
- Failover Routing ::: You must have at least two servers . If the main server with mapped status IP is down then it will start routing the traffic to new static IP server . Two server work like active passive servers . R53 will keep on checking the servers and if some one dies it will start routing the traffic to new server and now it will become active . When the old comes up it will become passive now . We will have create two records one as active and other as passive. Hosted Zones are public and private but failover policy is applicable on public hosted zone only .
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- Geolocation Routing ::: It will check from which geo location this query is coming and it will give static IP of that server which is near to that geo location . In this case if DNS resolution request is coming from US then US server IP will be given for this Domain name . Suppose you have website and DNS mapping is done in two servers having IP in Singapore and US then It will see that Singapore is near to India than US hence it will give the address of Singapore server . It will not consider latency may be if US server is responding faster . If Query is coming in US then

it will send it to US server . R53 and root server know this as ISP keep on sending the required data to other ISP networks . If two regions override each other than user will be sent to smaller region only . Suppose for a single domain name we want to show specific content for specific user then on the basis of geo location traffic will be routed to static IPs of that geo location and then you can serve the users regionally . Otherwise different Top level domains can also do this work .

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- Multi value routing means it has multiple IPs mapped and multiple IPs will be returned for a DNS query and you can use any one . It will return healthy server only.
- Latency Based Routing ::: IP from which response with less latency is coming will be served . Based upon latency traffic is routed . May be far away server is giving fast response then . It will hit a simple query with multiple latency records created by me .
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- Weighted Routing ::: Means you can balance traffic between multiple servers. You will decide the percentage that how much traffic should be distributed among multiple static IP servers all hosting same website . Here same application will be running on all servers . You can send 5% traffic to a new server having new deployment and then we can increase the traffic .

- Geo Proximity Routing ::: Shrinking and expansion of zones will be done. We divide serves to handle dedicated regions . If we need to balance we will decrease the area of overloaded server and some other server's area will increase .
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- Steps
- Route53 is present under networking .
- You will see four options one is DNS management , Register a domain(Register and Transfer) .
- In DNS mangement if we have purchased a domain name from route53 then. Hosted zone will be created automatically otherwise we have to create it manually .
- Now once created manually 4 name servers will appear .com, .in, ,org and .net . One SOA start of authority will created . SOA tells domain information .
- Now we will have to create Record set . Record set has DNS to IP info and Routing policy , For simple policy just create one record set . For Latency and Geo based create multiple record sets with different different IP values with different region values and all things same .
- For failover policy first create Health checks of the server which is hosted on static public IP which DNS has resolved .You will have to set primary and secondary .

