Types of DNS Service

Authoritative DNS: An authoritative DNS service provides an update mechanism that developers use to manage their public DNS names. It then answers DNS queries, translating domain names into IP address so computers can communicate with each other. Authoritative DNS has the final authority over a domain and is responsible for providing answers to recursive DNS servers with the IP address information. Amazon Route 53 is an authoritative DNS system.

Recursive DNS: Clients typically do not make queries directly to authoritative DNS services. Instead, they generally connect to another type of DNS service known a resolver, or a recursive DNS service. A recursive DNS service acts like a hotel concierge: while it doesn't own any DNS records, it acts as an intermediary who can get the DNS information on your behalf. If a recursive DNS has the DNS reference cached, or stored for a period of time, then it answers the DNS query by providing the source or IP information. If not, it passes the query to one or more authoritative DNS servers to find the information.

Here’s the main differences:

* The A record maps a name to one or more IP addresses, when the IP are known and stable.
* The CNAME record maps a name to another name. It should only be used when there are no other records on that name.
* The ALIAS record maps a name to another name, but in turns it can coexist with other records on that name.
* The URL record redirects the name to the target name using the HTTP 301 status code.

Some important rules to keep in mind:

* The A, CNAME, ALIAS records causes a name to resolve to an IP. Vice-versa, the URLrecord redirects the name to a destination. The URL record is simple and effective way to apply a redirect for a name to another name, for example to redirect www.example.com to example.com.
* The A name must resolve to an IP, the CNAME and ALIAS record must point to a name.

Amazon Route 53 alias records provide a Route 53–specific extension to DNS functionality. Alias records let you route traffic to selected AWS resources, such as CloudFront distributions and Amazon S3 bucket. They also let you route traffic from one record in a hosted zone to another record.

Unlike a CNAME record, you can create an alias record at the top node of a DNS namespace, also known as the zone apex. For example, if you register the DNS name example.com, the zone apex is example.com. You can't create a CNAME record for example.com, but you can create an alias record for example.com that routes traffic to www.example.com.

A mail exchanger **record** (**MX record**) is a type of certified and verified resource **record** in the Domain Name System that specifies a mail server responsible for accepting email messages on behalf of a recipient's domain, and a preference value used to prioritize mail delivery if multiple mail servers are available.

10 mail.example.com

Elastic Load Balancing automatically distributes incoming application traffic across multiple targets, such as Amazon EC2 instances, containers, and IP addresses. It can handle the varying load of your application traffic in a single Availability Zone or across multiple Availability Zones. Elastic Load Balancing offers three types of load balancers that all feature the high availability, automatic scaling, and robust security necessary to make your applications fault tolerant.

Application Load Balancer

Application Load Balancer is best suited for load balancing of HTTP and HTTPS traffic and provides advanced request routing targeted at the delivery of modern application architectures, including microservices and containers. Operating at the individual request level (Layer 7), Application Load Balancer routes traffic to targets within Amazon Virtual Private Cloud (Amazon VPC) based on the content of the request.

Network Load Balancer

Network Load Balancer is best suited for load balancing of TCP traffic where extreme performance is required. Operating at the connection level (Layer 4), Network Load Balancer routes traffic to targets within Amazon Virtual Private Cloud (Amazon VPC) and is capable of handling millions of requests per second while maintaining ultra-low latencies. Network Load Balancer is also optimized to handle sudden and volatile traffic patterns.

Classic Load Balancer

Classic Load Balancer provides basic load balancing across multiple Amazon EC2 instances and operates at both the request level and connection level. Classic Load Balancer is intended for applications that were built within the EC2-Classic network.

Q: Can I privately access Elastic Load Balancing APIs from my Amazon Virtual Private Cloud (VPC) without using public IPs?

Yes, you can privately access Elastic Load Balancing APIs from your Amazon Virtual Private Cloud (VPC) by creating [VPC Endpoints](http://docs.aws.amazon.com/AmazonVPC/latest/UserGuide/vpc-endpoints.html). With VPC Endpoints, the routing between the VPC and Elastic Load Balancing APIs is handled by the AWS network without the need for an Internet gateway, NAT gateway, or VPN connection.

With Route 53, there is a default limit of 50 domain names. However, this limit can be increased by contacting AWS support.