AWS Routing outside in with

Route 53

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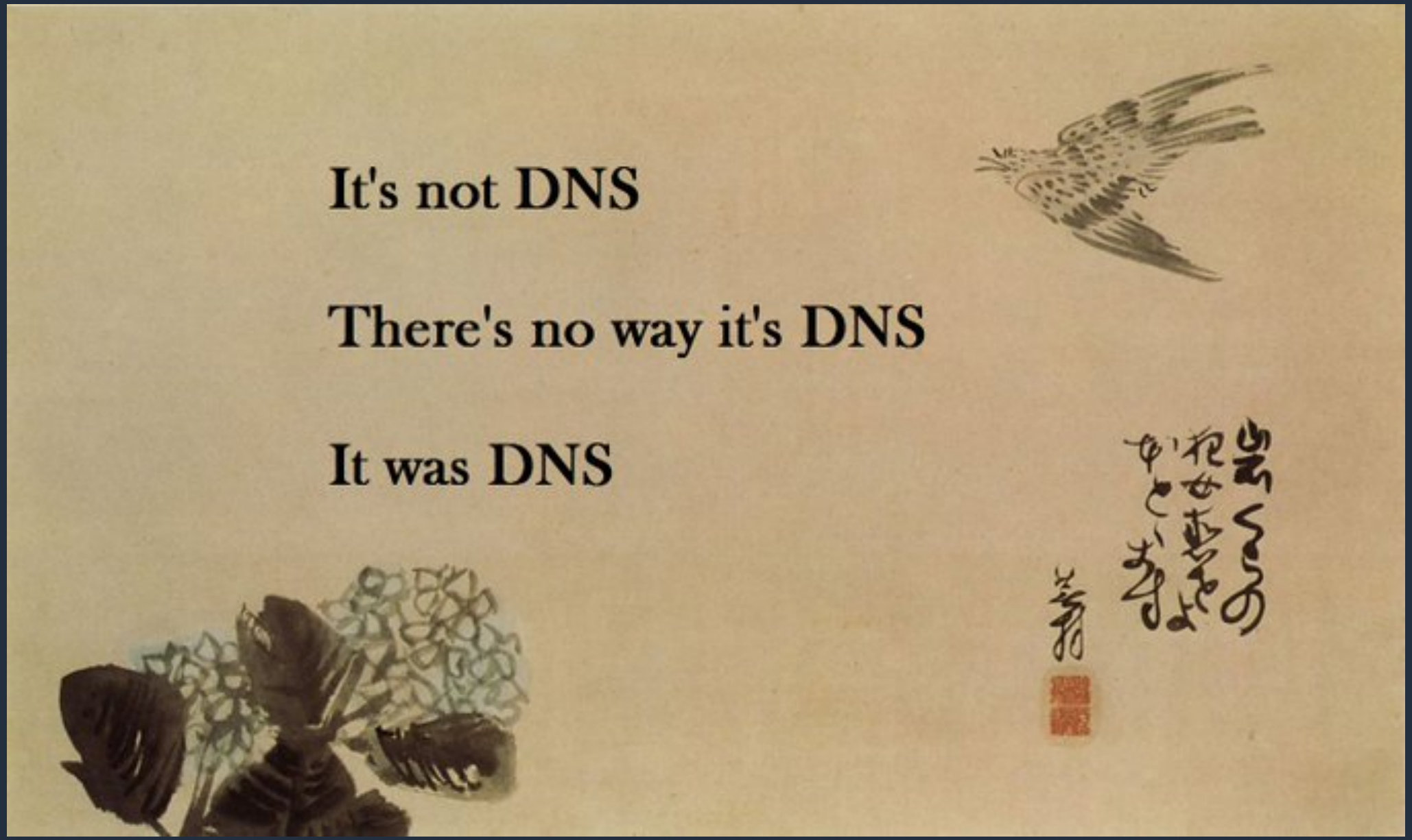


AWS Route 53

1. High available and reliable
2. Flexible
3. Designed for use with other Amazon Web Services
4. Simple
5. Fast
6. Cost-effective
7. Secure
8. Scalable
9. Hybrid Cloud

Reliable

- Redundant locations
- Backed by SLA

Fast

- Fast propagation changes

Integrated with AWS

- ELB-Alias Queries
- Latency Based Routing
- More to come

Easy to use

- Console
- Programmatic API

Cost Effective

- Inexpensive rates
- Pay as you go model

Flexible

- Geo DNS
- Weighted Round Robin
- Self-Aliasing

Amazon Route 53's Key Features

High Availability DNS	Advance Routing: Geo DNS, LBR, WRR	Private DNS
Health checks and failover	DNS RegistratiHealth checks and failover ons	Alias to AWS Records

High Availability DNS

High Availability DNS

- Amazon Route 53 is a highly available and scalable DNS web service.
- Designed to give developers and businesses an extremely reliable and cost effective way to route end users to Internet applications.
- Amazon Route 53 can handle spikes in traffic volume without requiring any warming up of servers.
- Use advanced routing policies along with health checks and failovers to ensure your application is always available to end users, and provides the best experience.

Health Checks

Health Checks

- Once enabled, Health Check agents will monitor each end-point of your application to determine its availability, returning a status of “healthy” or “unhealthy.
- Health Checks can be used to simulate requests similar to those made by end users.
- You can configure a CloudWatch alarm for each health check to receive a notification when a resource is determined to be unhealthy.
- If a failover is configured, and the agents determine the endpoint to be unhealthy,
- Amazon Route 53 will redirect your end users to pre-determined alternate end-points that are functioning properly.

Health Checks

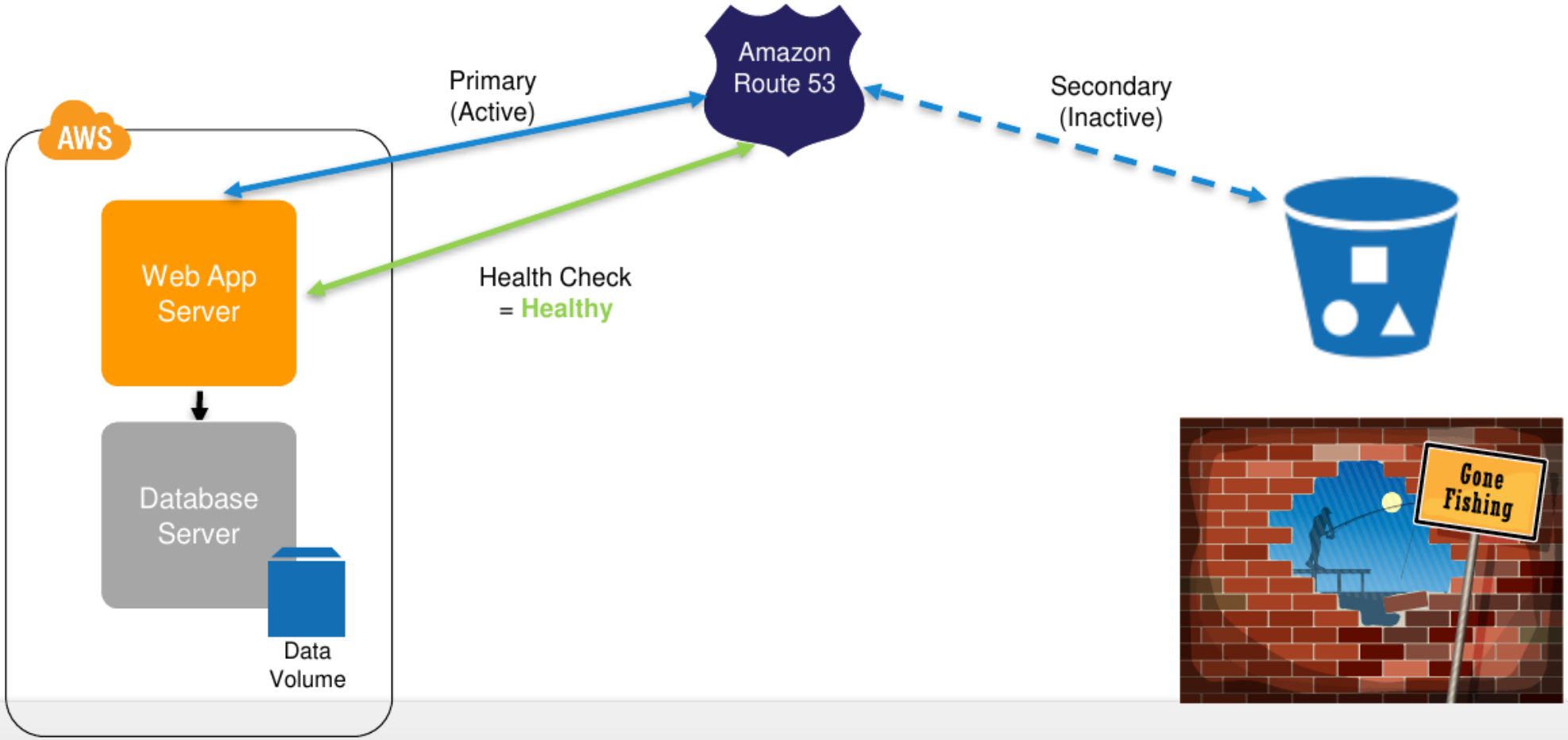
- **Calculated Health Checks** let you combine the results of multiple Amazon Route 53 health checks into a single value using common operations such as AND, OR, and NOT.
- **Latency Measurement Health Checks** let you measure the performance of your application in addition to its availability.

DNS Failover

DNS Failover

- You can configure a failover record that is tied to your health check.
- If the health check returns a status of healthy, your application will continue to function as usual, but if the health check returns a status of unhealthy, then Amazon Route 53 will stop returning the value of the unhealthy endpoint, and begin responding to queries with the value of the failover record.
- Utilizing failover records helps ensure that you only return answers for resources that are healthy and reachable from the outside world, by routing your end users away from failed or unhealthy parts of your application.
- Failing over to a healthy endpoint ensures minimal downtime for your website or application.

Simple Failover Configuration



Advanced Routing Policies

- Simple Routing: With simple routing, Amazon Route 53 responds to DNS queries based only on the values in the resource record set (i.e., the IP).
- Use a simple routing policy when you have a single resource that performs a given function for your domain.
- Amazon Route 53 also supports complex routing policies, including:

1. Weighted Round Robin Routing
2. Latency Based Routing
3. Geolocation Routing

Weighted Round Robin Routing

- Weighted resource record sets allow you to associate multiple records with a single DNS name.
- The probability of any one resource record set being selected depends on its weight as a proportion of the total weight for all resource record sets in the group.

  Weight for a given resource record set / Sum of the weights for the resource record sets

Latency Based Routing

- Latency Based Routing enables you to run multiple stacks of your application in different EC2 regions around the world.
- Amazon Route 53 will route end users to the end-point that provides the lowest latency.
- Latency between hosts on the Internet can change over time as a result of changes in network connectivity and routing. Latency-based routing is based on latency measurements performed over a period of time, and the measurements reflect these changes.

Geolocation Routing

- Geolocation Routing directs requests to specific endpoints based on the geographic location from which the request originates.
- Enables you to customize localized content or restrict distribution of content to only the markets you have licensed, or select to distribute to.
- There are three levels of geographic granularity: continent, country, and state.
- Distribution of requests is more predictable and consistent than LBR.

DNS

DNS Registration

- Registering Domains Using Amazon Route 53
- Transferring Domains to Amazon Route 53

Private DNS

- Use Amazon Route 53 to manage custom DNS names for resources internal to a VPC, such as EC2 instances, RDS databases, and ElastiCache nodes.
- Private DNS prevents these names and your network topology from being exposed to the public Internet.
- You can also use Amazon Route 53 to configure split-view DNS, also known as split-horizon DNS.

Private DNS

- Split Horizon DNS enables you to maintain both internal and external versions of the same website or application by configuring public and private hosted zones to return different internal and external IP addresses for the same domain name.
- Useful for testing changes before making them public.

Alias Records to AWS Resources

Alias Records

- Amazon Route 53 enables customers to use Alias records to point to other AWS resources.
- Alias records save time as changes to the endpoint the record is pointing to are automatically recognized.
- Queries to Alias records that are mapped to Elastic Load Balancers, Amazon CloudFront distributions, and Amazon S3 website buckets are free.

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