



Amazon Web Service

AWS-Route 53

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DNS-Domain Name System

If you have used the internet, You have used DNS. DNS is used to convert human friendly domain names (such as <https://prakash-securecloud.com>) into an internet Protocol (IP) Address (Such as <https://42.10.132.29>)

IP address are used by computers to identify each other on the network. IP addresses commonly come in 2 different forms IPv4 and IPv6


IP4 vs IP6

The IPv4 space is a 32 bit field and has over 4 billion different addresses (4,294,967,296 to be precise).

IPv6 was created to solve this depletion issue and has an address space of 128bits which in theory is

340,282,366,920,938,463,463,374,607,431,768,211,456 addresses

or 340 undecillion addresses.



If we look at common domain names such as google.com, bbc.co.uk.

you will notice a string of characters separated by dots (periods). The last word in a domain name represents the “top level domain”. The second word in a domain name is known as a second level domain name (this is optional though and depends on the domain name).

.com


.edu

.gov

.co.uk

.gov.uk

.com.au



These top level domain names are controlled by the Internet Assigned Numbers Authority (IANA) in a root zone database which is essentially a database of all available top level domains. You can view this database by visiting -

<http://www.iana.org/domains/root/db>

Domain Registrars

Because all of the names in a given domain name have to be unique there needs to be a way to organize this all so that domain names aren't duplicated. This is where domain registrars come in. A registrar is an authority that can assign domain names directly under one or more top-level domains. These domains are registered with InterNIC, a service of ICANN, which enforces uniqueness of domain names across the Internet. Each domain name becomes registered in a central database known as the WhoIS database.

Popular domain registrars include GoDaddy.com, 123-reg.co.uk etc.

NS Records

NS stands for Name Server records and are used by Top Level Domain servers to direct traffic to the Content DNS server which contains the authoritative DNS records.

A Record

An "A" record is the fundamental type of DNS record and the "A" in A record stand for "Address". The A record is used by computer to translate the name of the domain to the IP address. For example `https://www.google.com` might point to `http://43.12.29.123`

TTL Record

The length that a DNS record is cached on either the Resolving Server or the users own local PC is equal to the value of the “Time To Live” (TTL) in seconds. The lower the time to live, the faster changes to DNS records take to propagate throughout the internet.

CNAME Record

A Canonical Name record (abbreviated as CNAME record) is a type of resource record in the Domain Name System (DNS) used to specify that a domain name is an alias for another domain (the 'canonical' domain).

ALIAS record

An ALIAS record is a virtual record type that we created to provide CNAME-like behaviour on apex domains. For example, if your domain is example.com and you want it to point to a host name like myapp.herokuapp.com , then you cannot use a CNAME record, but you can use an ALIAS record.

apex domain is a custom domain that doesn't contain a sub domain, apex domains are also naked domain, or base.

- Simple
- Weighted
- Latency
- Failover
- Geolocation



Simple

This is the default routing policy when you create a new record set. This is most commonly used when you have a single resource that performs a given function for your domain, for example, one web server that serves content for the `http://Google.com` website

Simple



Simple-LAB

Dashboard

Hosted zones

Health checks

Traffic flow

Traffic policies

Policy records

Domains

Registered domains

Pending requests

Back to Hosted Zones

Create Record Set

Import Zone File

Delete Record Set

Test Record Set

Record Set Name



Any Type



Aliases Only



Weighted Only



Displaying 1 to 3 out of 3 Record Sets



Name



Type

Value



Evaluate Target Health



cloudschoolmanager.tk.

A

ALIAS demo-c36188182ef0fea.elb.us-west-2.amazonaws.com

No

ns-499.awsdns-62.com.



cloudschoolmanager.tk.

NS

ns-563.awsdns-06.net.
ns-1950.awsdns-51.co.uk.
ns-1473.awsdns-56.org.

-



cloudschoolmanager.tk.

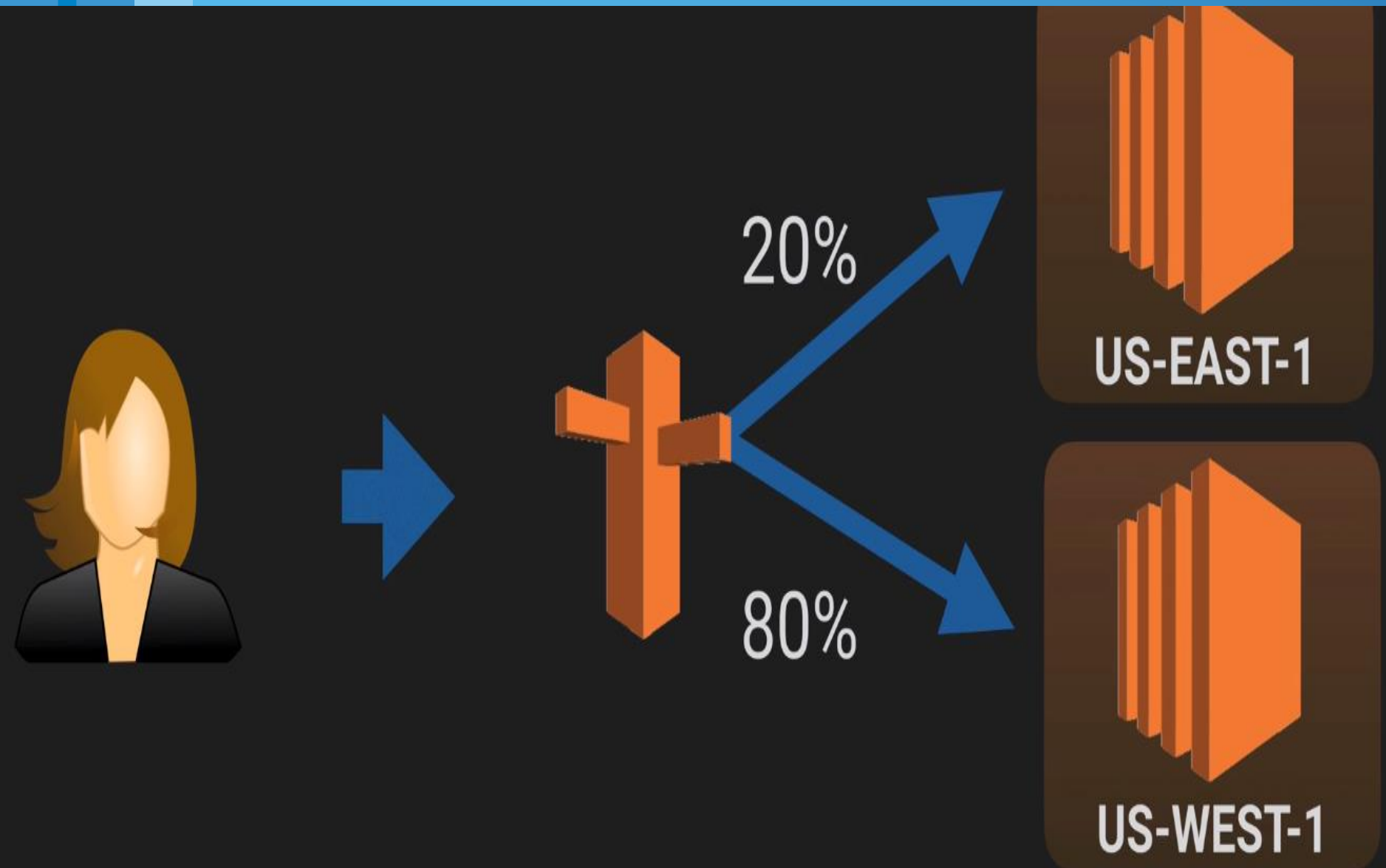
SOA

ns-499.awsdns-62.com. awsdns-hostmaster.amazon.com

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To get started, click Create Record Set.

Weighted Routing Policy Lab





Weighted Routing Policy Lab

Weighted Routing Policies let you split your traffic based on different weights assigned.

For example you can set 10% of your traffic to go to US-EAST-1 and 90% to go to EU-WEST-1.

Weighted Routing Policy Lab

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Any Type ▾

☐ Aliases Only☐ Weighted Only

⏪ ⏩ Displaying 1 to 3 out of 3 Record Sets ⏪ ⏩

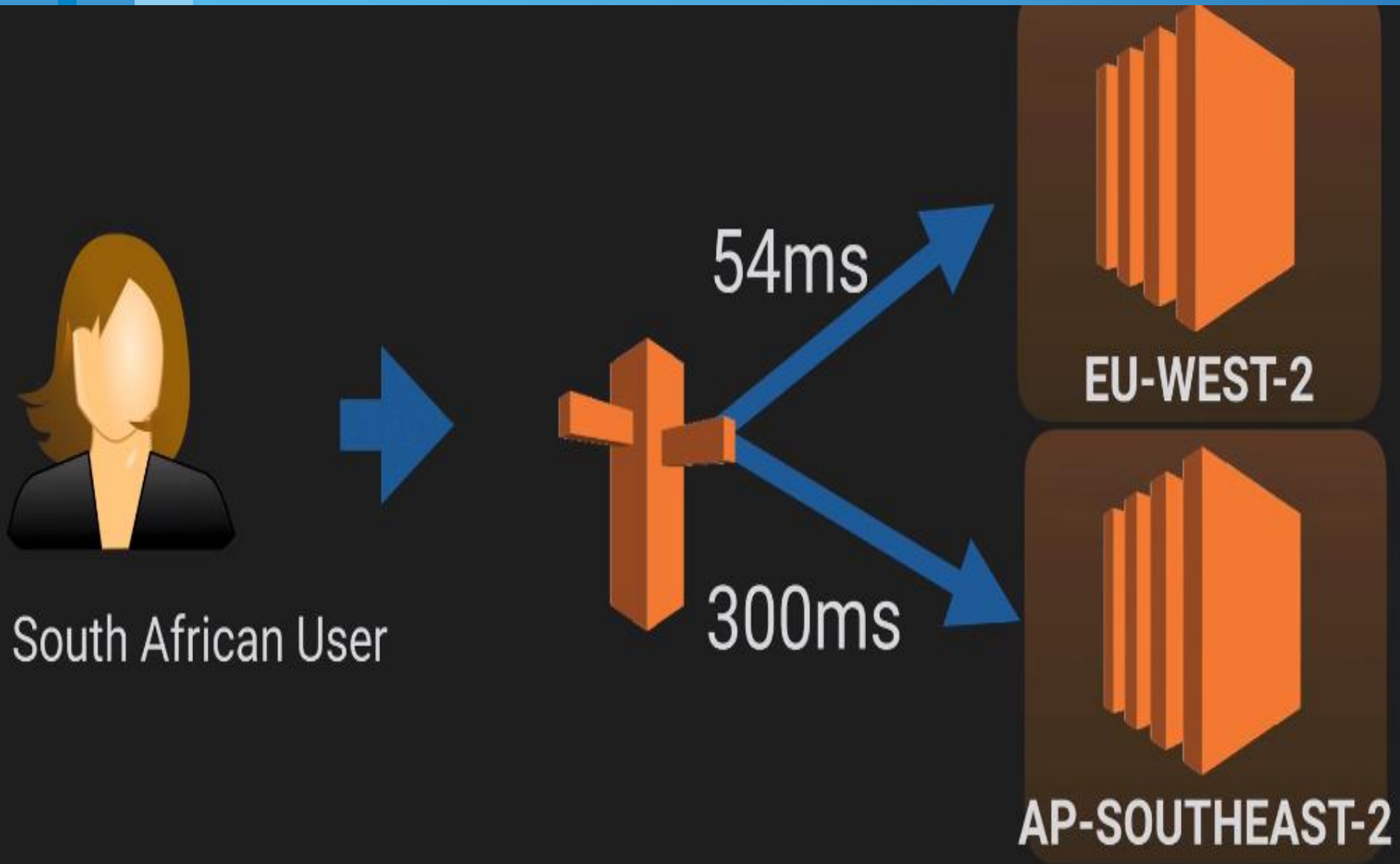
▲	Type ▾	Value	▾	Evaluate Target Health ▾	Health Check ID ▾	TTL ▾	Region ▾	Weight
per.tk.	A	ALIAS demo-c36188182ef0ffea.elb.us-west-2.amazonaws.com	No	-	-	-	-	70
per.tk.	NS	ns-499.awsdns-62.com. ns-563.awsdns-06.net. ns-1950.awsdns-51.co.uk. ns-1473.awsdns-56.org.	-	-	-	172800	-	-
per.tk.	SOA	ns-499.awsdns-62.com. awsdns-hostmaster.amazon.com	-	-	-	900	-	-

Latency Routing Policy Lab

Latency based routing allows you to route your traffic based on the lowest network latency for your end user (ie which region will give them the fastest response time).

To use latency-based routing you create a latency resource record set for the Amazon EC2 (or ELB) resource in each region that hosts your website. When Amazon Route 53 receives a query for your site, it selects the latency resource record set for the region that gives the user the lowest latency. Route 53 then responds with the value associated with that resource record set.

Latency Routing Policy Lab



Latency Routing Policy Lab

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Any Type ▾

☐ Aliases Only☐ Weighted Only

⏪ ⏴ Displaying 1 to 3 out of 3 Record Sets ⏵ ⏩

▲	Type ▾	Value	▼	Evaluate Target Health ▾	Health Check ID ▾	TTL ▾	Region
iolmanager.tk.	A	ALIAS demo-c36188182ef0ffea.elb.us-west-2.amaz	No	-			us-west-
iolmanager.tk.	NS	ns-499.awsdns-62.com. ns-563.awsdns-06.net. ns-1950.awsdns-51.co.uk. ns-1473.awsdns-56.org.	-	-		172800	
iolmanager.tk.	SOA	ns-499.awsdns-62.com. awsdns-hostmaster.amazor	-	-		900	

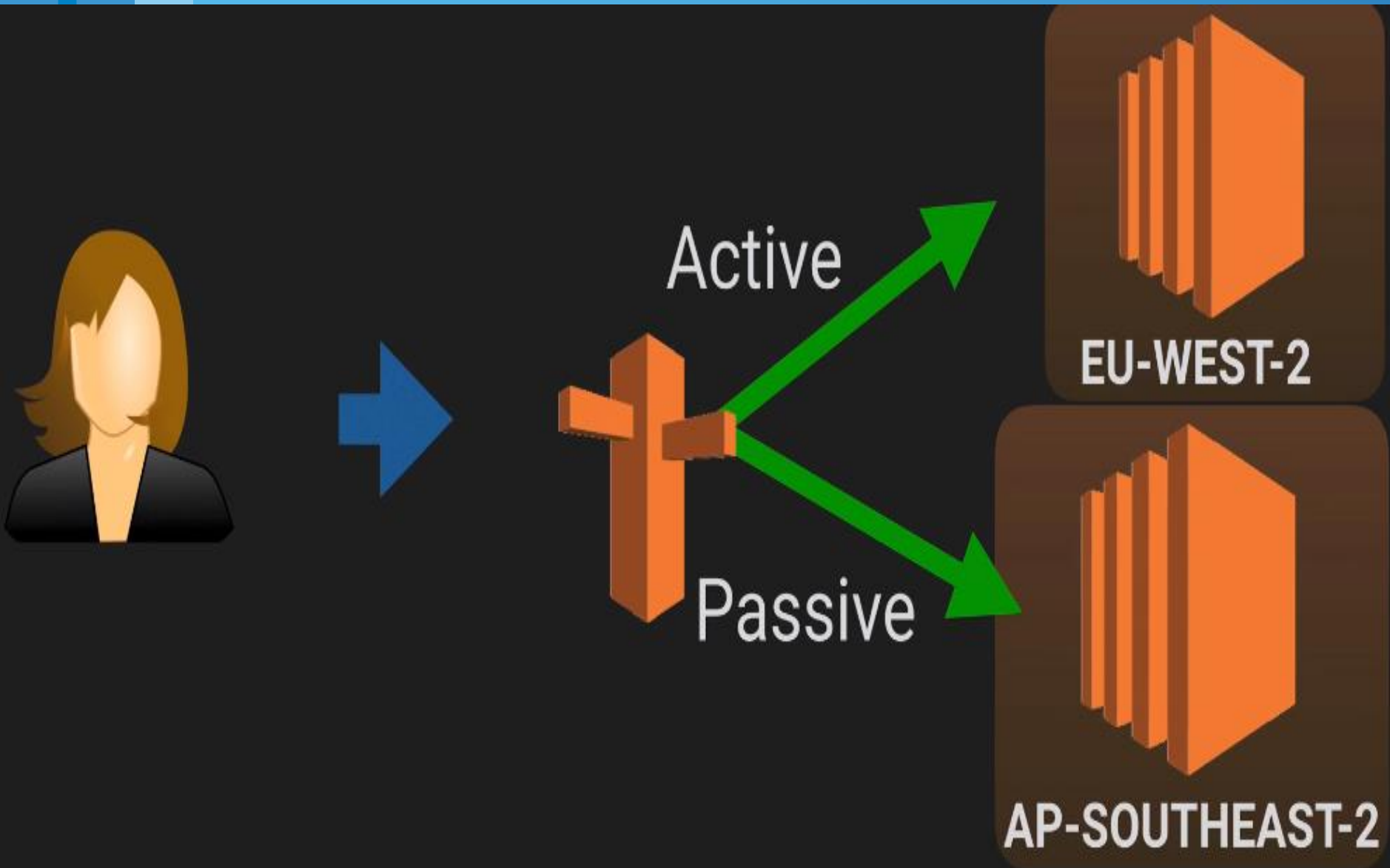
Failover Routing Policy Lab

Failover routing policies are used when you want to create an active/passive set up. For example you may want your primary site to be in EU-WEST-2 and your secondary DR Site in AP-SOUTHEAST-2.

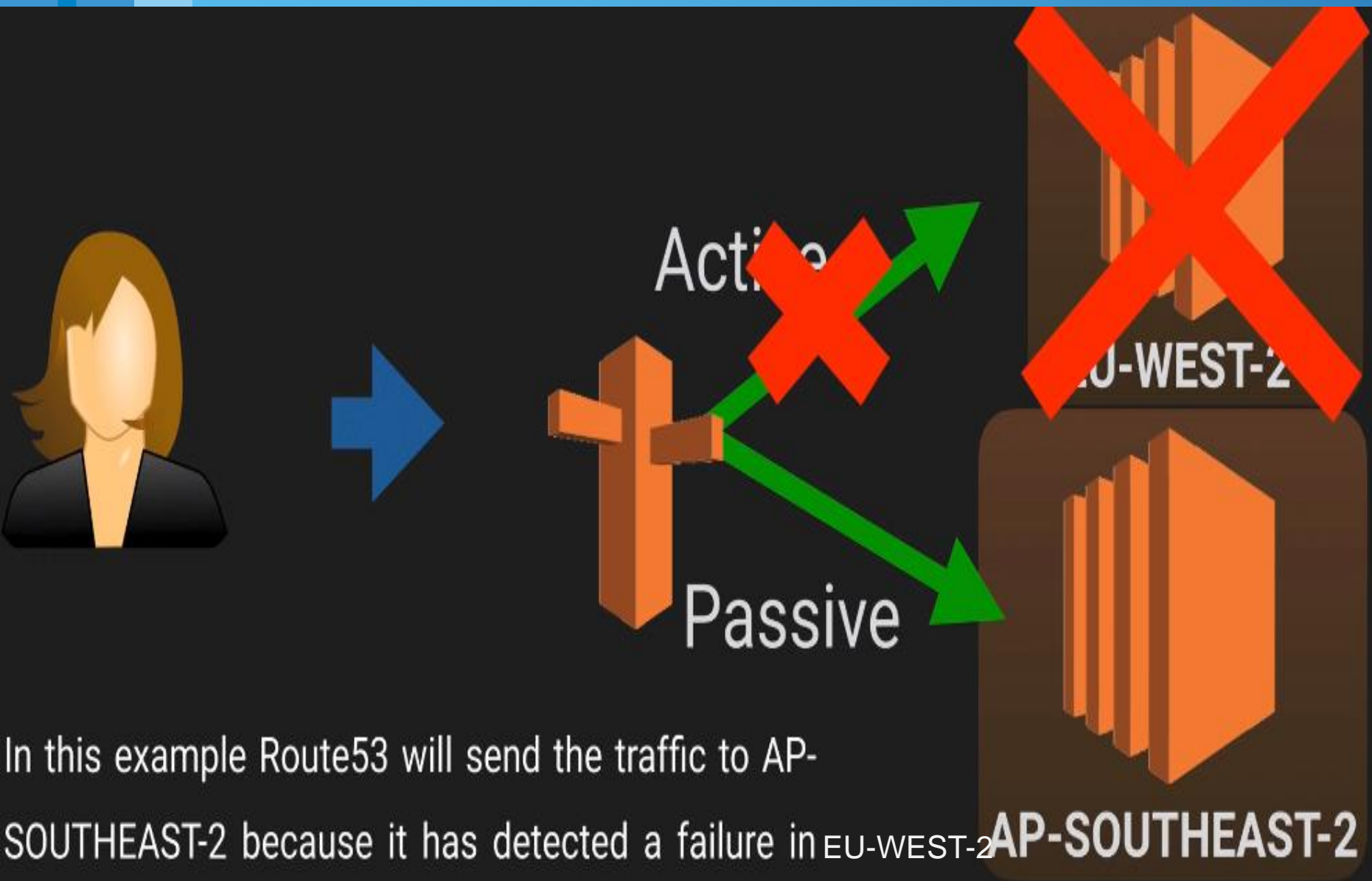
Route53 will monitor the health of your primary site using a health check.

A health check monitors the health of your end points.

Failover Routing Policy Lab



Failover Routing Policy Lab



Geolocation -Lab

Use when you want to route traffic based on the location of your users.

Geolocation routing lets you choose the resources that serve your traffic based on the geographic location of your users, meaning the location that DNS queries originate from. For example, you might want all queries from Europe to be routed to an ELB load balancer in the Frankfurt region.

When you use geolocation routing, you can localize your content and present some or all of your website in the language of your users. You can also use geolocation routing to restrict distribution of content to only the locations in which you have distribution rights. Another possible use is for balancing load across endpoints in a predictable, easy-to-manage way, so that each user location is consistently routed to the same endpoint.

You can specify geographic locations by continent, by country, or by state in the United States. If you create separate records for overlapping geographic regions—for example, one record for North America and one for Canada—priority goes to the smallest geographic region. This allows you to route some queries for a continent to one resource and to route queries for selected countries on that continent to a different resource