DAY– 7
AWS
ELASTIC LOAD BALANCER

AWS Architecture and Design

[* - With Hands on Demo]

AWS ELB

→   AWS Scaling Services

→   What is ELB?

→   Load Distribution with ELB

→   ELB Deep down

Amazon Elastic Load Balancer

We're sorry.

Service is temporarily unavailable. Our engineers are working quickly to resolve the issue.

Find out why you may have encountered this error.

Something is technically wrong.

Thanks for noticing—we're going to fix it up and have things back to normal soon.

المربية Dansk Deutsch English English UK Español فارسی Suomi Filipino Français עברית हिन्दी Magyar Bahasa Indonesia Italiano 日本語 한국어 Bahasa Melayu Nederlands Norsk Polski Português Русский Svenska ภาษาไทย Türkçe 简体中文
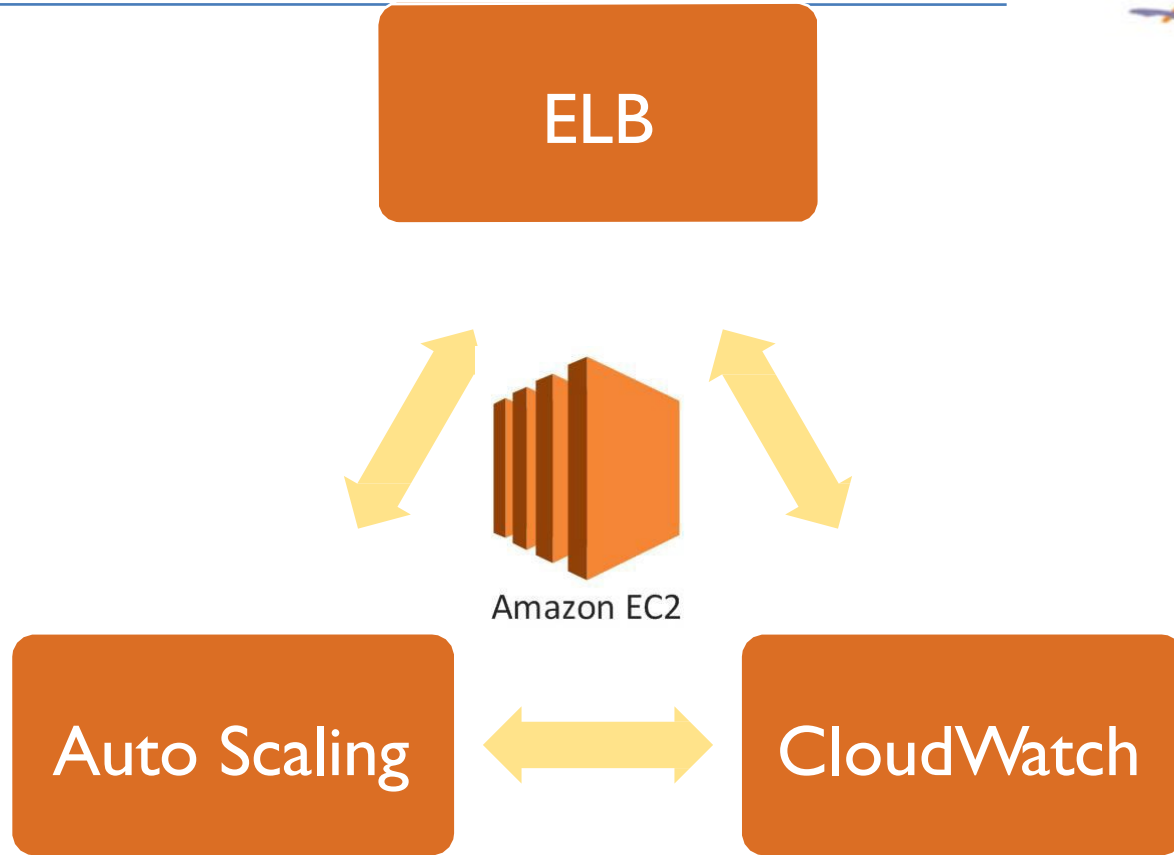
© 2016 Twitter   About   Help   Status

I Want Advanced Notice of Any Unplanned Outages!

Scale with AWS
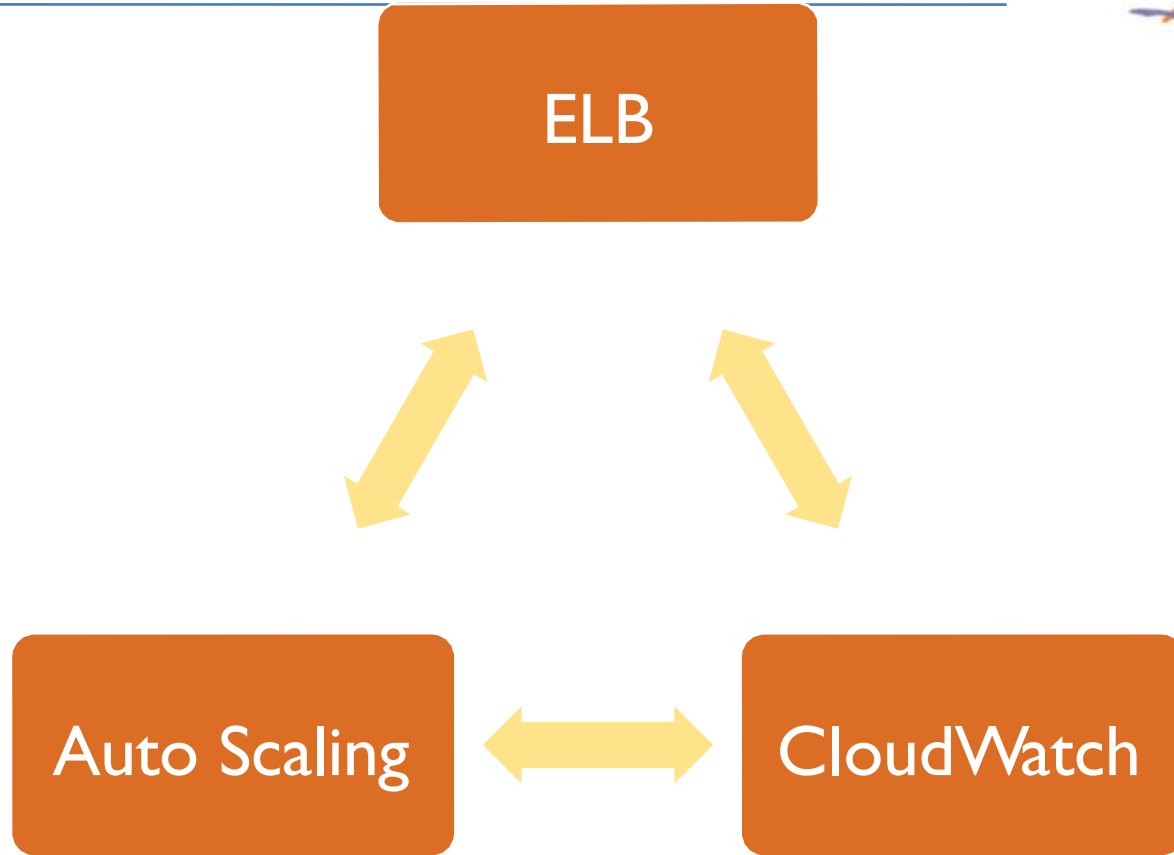
Scale with AWS

Amazon Elastic Load Balancing
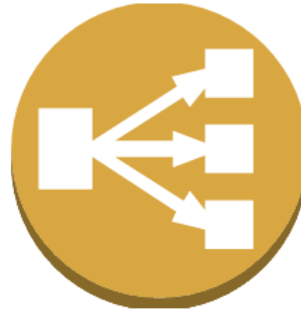
Elastic Load Balancer

Elastic Load Balancing

Distribute Incoming Traffic

Health Check of Instance

Spans Across AZs

Fault Tolerance

Elastic

http://aws.amazon.com/elasticloadbalancing/

Load Balancing with Amazon ELB

Amazon Elastic Load Balancing will:

✓ Distribute traffic among EC2 instances.

✓ Works with in a region across AZs

✓ Performs HealthCheck for Fault Tolerance

✓ Security with SSL protocol

Load Balancing with Amazon ELB

Amazon Elastic Load Balancing

✓ Elastic Capacity

✓ Seamless Integration with EC2, Route 53, Auto Scaling

✓ Pay as You Go Model

✓ Managed Load Distribution so
   ✓ No Maintenance headaches
   ✓ No SW/HW upgrades
   ✓ No Capacity planning
   ✓ No Manual Intervention for Expansion

Difference in Elasticity & Scalability

Elasticity:

- ✓ Ability to utilize resources in a dynamic and efficient way
- ✓ Non-cloud systems tend to accommodate expected load variation by remaining under-utilized
- ✓ **Under-utilization costs:** capital, space, power, cooling, and maintenance.
- ✓ An elastic environment is highly utilized all the time, by just-in-time provisioning of required resources.
- ✓ The more quickly you can act, the more you can save and the more you can do.

Scalability:

- ✓ Ability of a resource to get big without changing design.
- ✓ Scalability describes a system which is designed to accommodate on-demand elastic growth without changing the design.
- ✓ Switching growth methods during growth is a sure fire way to stumble; good plans don't change!
- ✓ **Scale issues exist at all infrastructure tiers:** DNS, load-balancing, web, app, DB, network, storage.

ELB Features

Distribute Traffic in Multiple AZs

HTTP, HTTPS, TCP & SSL Protocols

Sticky Session

AutoScaling can add instance on the Fly
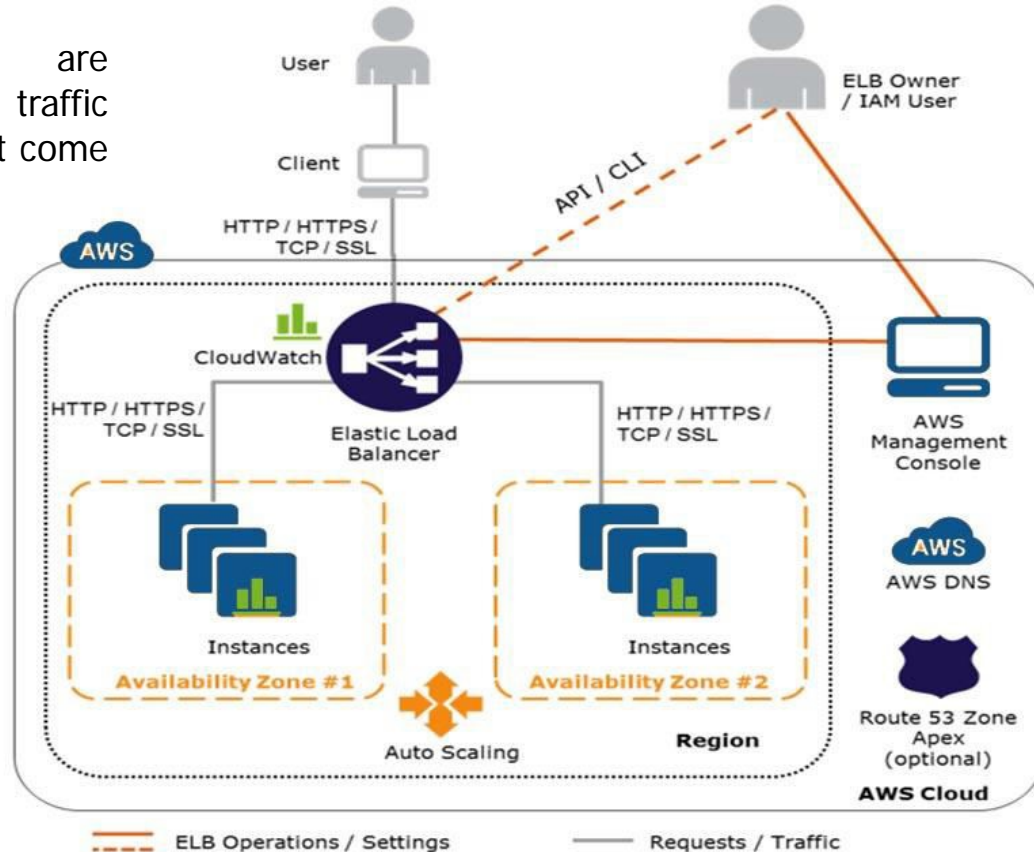
Monitroing with CloudWatch

Health Check

Logging

Security

Architecture of the Elastic Load Balancing Service

The load balancers are resources that monitor traffic and handle requests that come in through the Internet.

The controller service monitors the load balancers, adds and removes capacity as needed, and verifies that load balancers are behaving properly.

User

Client

ELB Owner / IAM User

API / CLI

AWS

HTTP / HTTPS / TCP / SSL

CloudWatch

Elastic Load Balancer

HTTP / HTTPS / TCP / SSL

HTTP / HTTPS / TCP / SSL

Instances

Availability Zone #1

Instances

Availability Zone #2

Auto Scaling

Region

AWS Management Console

AWS

AWS DNS

Route 53 Zone Apex (optional)

AWS Cloud

----- ELB Operations / Settings ——— Requests / Traffic

ELB in Deep Down

Round Robin & Sticky Session Algorithms

Supports Thousands (30/40K+) Concurrent Users

Supports Internal & External Routing

Pre Warm ELB

ELB in Deep Down

No Fixed IP

Cannot span across Regions

Can not handle spikes

IP Address Changes may affect DNS mapping in cache

ELB Key Features

Cross Zone
Load Balancing

Connection
Drainage

DNS Failover
with Route 53

Supports
Perfect Forward
Secrecy

Demo

In the next video we will do hands on with AWS ELB

Thank You

Email us – support@intellipaat.com

Visit us - https://intellipaat.com