Elastic Load Balancing

* ELB distributes incoming application or network traffic across multiple targets, such as EC2 instances, containers, and IPs, in multiple AZs. ELB scales the load balancer automatically as traffic scales. It also allows us to configure health checks which are used to monitor the health of targets so that the balancer can only distribute load among healthy targets. The responsibility of encryption and decryption can also be put on load balancer so that the application can entirely focus on logic. You can add and remove compute resources from your load balancer as your needs change, without disrupting the overall flow of requests to your applications.
* Your load balancer serves as a single point of contact for clients.
* Use of a load balancer increases availability and fault tolerance.
* ELB supports three types of load balancers: Classic, Network and Application LBs.  There is a key difference between the ways you configure these load balancers. With Application Load Balancers and Network Load Balancers, you register targets in target groups, and route traffic to the target groups. With Classic Load Balancers, you register instances with the load balancer. When you enable an Availability Zone for your load balancer, Elastic Load Balancing creates a load balancer node in the Availability Zone. If you register targets in an Availability Zone but do not enable the Availability Zone, these registered targets do not receive traffic. After you disable an Availability Zone, the targets in that Availability Zone remain registered with the load balancer, but the load balancer will not route traffic to them.
* Cross Zone Load Balancing: When cross zone LB is enabled then each load balancer (in any AZ) distributes traffic among all targets in all AZs. When disabled each ELB distributes traffic on targets in its AZ only.
* Default Setting for Cross Zone Load balancing:
* When creating Application Load Balancer – enabled by default
* When creating Network Load Balancer – disabled by default
* When creating Classic Load Balance – enabled by AWS console, but disabled by CLI or API
* A listener is a process that checks for connection requests. It is configured with a protocol and port number for connections from clients to the load balancer and a protocol and port number for connections from the load balancer to the targets.

SUMMARY AND COMPARISON OF ALL TYPES OF LBs

**Classic Load Balancers**

* A *listener* checks for connection requests from clients, using the protocol and port that you configure, and forwards requests to one or more registered instances using the protocol and port number that you configure. You add one or more listeners to your load balancer.
* To ensure that your registered instances are able to handle the request load in each Availability Zone, it is important to keep approximately the same number of instances in each Availability Zone registered with the load balancer.