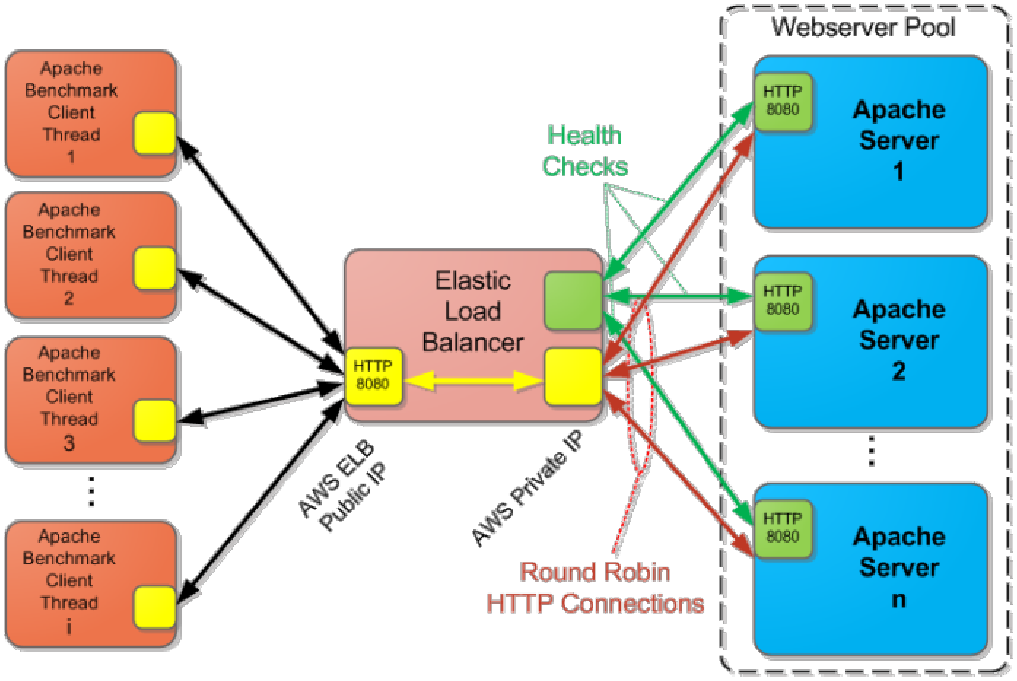
AWS Elastic Load Balancer

Configure and Deploy an Elastic Load Blancer on AWS

From the previous module, the company understands that vertical scaling (changing the type of an instance) can improve bandwidths to a limit. True scalability lies in harnessing horizontal scaling by distributing the load amongst multiple instances. In this part of the project, you will setup an Elastic Load Balancer (ELB) and place a number of web servers behind the ELB to attempt to improve the throughput of the server.

Elastic Load Balancer

The Elastic Load Balancer acts as a network router that will send incoming requests to multiple EC2 Instances sitting behind it in a round-robin fashion. Round-robin scheduling is not perfect, but it can do an adequate job given a large number of users, each with relatively simple requests. The Instances it points to can be added manually through the web console, programmatically through an API, or dynamically with Auto Scaling Group. It also does a Health Check to see if the host is alive (if not, it will stop sending requests to it). Using an ELB costs $0.025 per hour + $0.008 per GB transferred through it.



Getting Started with the ELB

For this part of the scenario, we will setup the ELB using the AWS Management Console to test and assess its functionality. For any queries, refer to the ELB Documentation.

Note: For this checkpoint, assign the tag with Key: `Project` and Value: `2.2` for all resources

1. Launch 3 m1.small instances with AMI ID: `ami-69e3d500` using the AMI. 2 of them (sever instances) will attached to the ELB (in the instructions below), and 1 (benchmark) will be used to benchmark the ELB.
2. Visit the Load Balancers page on the EC2 Dashboard and Create a new Load Balancer. Redirect all HTTP:80 requests and HTTP:8080 requests from the load balancer to HTTP:80 and HTTP:8080 respectively on any instances attached to the ELB.
3. As a health check, configure the ELB to ping HTTP:8080/upload periodically to ensure that the instances are up.
4. Note down the primary DNS address of the ELB (the A record) once it's created.
5. Attach one of the provisioned instance to the ELB. Ensure that this instance is "In-Service" behind the ELB before proceeding.
6. Log into the 3rd (Benchmarking) instance and fire up Apache Benchmark pointing to the ELB
7. Repeat steps 5 and 6 to add and benchmark another instance to the ELB.

When you are ready, complete the following checkpoint quiz:

checkpoint

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