

Task 1. Distributed Web Infrastructure

- For every additional element, why you are adding it

To enable resilience which means a system is reliable in that it is functioning as expected, available throughout , fault-tolerant in that failure is well mitigated



- What distribution algorithm your load balancer is configured with and how it works

Dynamic Round robin which configures all servers in a queue and sequentially allocates load to all servers since they are all have similar capabilities. The additional feature to monitor performance of the active servers provide metrics from long processing requests or delays which can be used to move load to other servers



- Is your load-balancer enabling an Active-Active or Active-Passive setup, explain the difference between both

Active-Active in that all servers are online and since they use round robin making sure there is no or minimal delay in case of server error which is not the case in Active-Passive which uses one server which is online and the other in standby. This small difference can be daunting in the chance the passive server on being started up experiences any issue in the process unlike the Active-Active which as both are online the failure of one is not an risk in transferring load to others in whatever occurrence



- How a database Primary-Replica (Master-Slave) cluster works

It is where the main database in use, usually referred to as the master, handles all write operations while making copies of itself to other nodes, which are referred to as slaves. This allows read operations to be spread out across all databases enhancing scalability and also as a failover measure so that in case of any issue, in a kind of voting system one of the slave nodes is elected as the master node and the process continues uninterrupted.



- What is the difference between the Primary node and the Replica node in regard to the application

The primary node handles all write operations while the replica node only handles read operations which are spread out across all nodes

