Web Infrastructure Design

Task 2.

Definitions and Explanations

1. **For every additional element, why are adding it:** we have added three new components, a firewall for each server to protect them from being attacked and exploited
2. **What are firewalls used for**: is a network security system that monitors and controls incoming and outgoing network traffic based on predetermined security rules. Establishes a barrier between trusted and untrusted networks.
3. **Why is traffic served over HTTPS**: It is more secure than standard http because it uses encryption on the data. This is done by using the Transfer Layer Security or TLS.
4. **What monitoring is used for**: it provides the capability to detect and diagnose any web application performance issues proactively.
5. **How the monitoring tool is collecting data**: it collects logs of the application server, MySQL Database and Nginx web server.
6. **Explain what to do if you want to monitor you web server QPS**: one web server handles 1k queries per second. Monitor it from the network and application level.

Issues

A. **Why terminating SSL at the load balancer is an issue**: it is an issue because decryption is resource and cpu intensive. Also The servers running will not be sending or receiving encrypted data anymore.
B. **Why having only one MySQL server capable of accepting writes is an issue**: If the database goes down, data cant be updated, added, deleted or managed any longer. Causing a bad user experience.
C. **Why having servers with all the same components (database, web server and application server) might be a problem**: this is because once you have a bug in one of the components in one of the servers then the bug will be valid in the other servers.