

# ALX Project

## Web infrastructure design

### Task 2.

#### Definitions and Explanations.

1. **For every additional element, why are adding it;** we are adding three new components; a firewall for each server to protect them from being attacked and exploited, 1 SSL certificate to server [www.foobar.com](http://www.foobar.com) over HTTPS and three monitoring clients that will collect logs and send them to our data collector Sumologic.
2. **What are firewalls for;** A Firewall is a network security device that monitors and filters incoming and outgoing network traffic based on an organization's previously established security policies. A firewall's main purpose is to allow non-threatening traffic in and to keep dangerous traffic out.
3. **Why is the traffic served over HTTPS;** HTTPS uses the SSL/TLS protocol to encrypt communications so that attackers can't steal data. SSL/TLS also confirms that a website server is who it says it is, preventing impersonations.
4. **What is monitoring is used for;** It provides the capability to detect and diagnose any web application performance issues proactively.
5. **How is the monitoring tool is collecting data;** It collects logs of the application server, MySQL Database and Nginx web server. A log in a computing context is the automatically produced and time-stamped documentation of events relevant to a particular system.
6. **Explain what to do if you want to monitor your web server QPS;** One web server handles 1K queries per second (QPS), I would basically monitor it from the network and application level.

#### Issues

- A. **Why terminating SSL at the load balancer level is an issue;** That is because decryption is resource and CPU intensive. Placing the decryption burden on the load balancer enables the server to spend processing power on application tasks but to be honest I don't know see the issue to be honest (I will update this).
- B. **Why having only one MySQL server capable of accepting writes is an issue;** It is an issue because once it is down it means do data can be added or updated meaning some features of the application won't work.
- 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.