

# ALX Project

## 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, 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;** is a network security system that monitors and controls incoming and outgoing network traffic based on predetermined security rules. It basically establishes a barrier between a trusted network and an untrusted network.
3. **Why is the traffic served over HTTPS;** because previously the traffic was passed over Hypertext Transfer Protocol (**HTTP**) which transfers data in plain text while **HTTPS** is secure where the data is encrypted using Transfer Layer Security (**TLS**).
4. **What monitoring is used for;** it provides the capability to detect and diagnose any web application performance issues proactively.
5. **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

- **Why terminating SSL at the load balancer level is an issue;** it is an issue 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 see the issue to be honest (I will update this).
- **Why having only one MySQL server capable of accepting writes is an issue;** because once it is down it means data can be added or updated meaning some features of the application won't work.
- **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.