

HOW IT WORKS

1. There are 3 added elements in our network infrastructure: monitoring client, firewall, and SSL Certificate.
2. The monitoring client is used to collect logs and send them to Sumologic. The firewall is used to protect our servers from being exploited by untrusted networks. The SSL certificate is to ensure that we are using HTTPS as compared to the previous HTTP.
3. Firewalls are a division between a private network and external networks. They manage traffic passing between the two networks.
4. The traffic is served over HTTPS since it is a secure version of HTTP. The information passed between HTTPS is secured either by the Secure Sockets Layer(SSL) or Transport Security Layer(TLS) while in HTTP information is passed through plain text.
5. Monitoring is used for checking the performance of the servers and in doing so may be able to detect any anomalies or defects in the system.
6. It collects logs of the web server, application server, and database in each server. Logs consist of timestamps which can then be measured against other pre-calculated times to establish the performance of each server.
7. Since we are measuring QPS we will have a look at the HTTPS requests per second. We will set up alerts on the monitoring clients to alert in case QPS exceeds certain thresholds.

ISSUES

1. Terminating SSL at the load balancer level is an issue because it can lead to potential security risks. Decrypting SSL traffic at the load balancer introduces a potential point of vulnerability. If the load balancer is compromised, an attacker could potentially gain access to sensitive information passing through it in plaintext.
2. Having only one MySQL server capable of accepting writes is an issue because if the master goes down, the application cannot write to the database anymore.
3. Having servers with all the same components (database, web server, and application server) might be a problem because a problem that affects one server could potentially affect all servers simultaneously, leading to widespread downtime or performance issues.