Web infrastructure design Project

Task 2: `2-secured_and_monitored_web_infrastructure`

`Url link =` [2-secured_and_monitored_web_infrastructure - Google Docs]

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`Definitions and Explanations.`

1. For every additional element, why are adding it?

The Purpose of Additions: As we expand our setup, three new components have been integrated. Each server now has a firewall to bolster defense against potential attacks and exploitation. Furthermore, an SSL certificate has been implemented for www.foobar.com, ensuring secure communication through HTTPS. Additionally, a trio of monitoring clients has been introduced to gather logs, which will be transmitted to our data collector Sumologic.

2. What are firewalls for?

Firewalls' Role: Firewalls act as network security systems, overseeing and managing both incoming and outgoing network traffic based on predetermined security regulations. Essentially, they function as a protective barrier, segregating a trusted network from an untrusted one.

3. Why is the traffic served over HTTPS?

The Significance of HTTPS Traffic: The adoption of HTTPS for traffic is motivated by the need for enhanced security. In contrast to the previous practice of transmitting data via Hypertext Transfer Protocol (HTTP), which exposes data in plain text, HTTPS secures data through encryption facilitated by Transport Layer Security (TLS).

4. What monitoring is used for?

Utilizing Monitoring: Monitoring serves the crucial purpose of proactively identifying and diagnosing potential performance hiccups within web applications.

5. How the monitoring tool is collecting data;?

Data Collection Mechanism of the Monitoring Tool: The monitoring tool gathers logs from diverse sources, including the application server, MySQL Database, and Nginx web server. In the realm of computing, a log refers to an automatically generated and timestamped record of events pertinent to a specific system.

6. Explain what to do if you want to monitor your web server QPS

Monitoring Web Server QPS: To monitor the query per second (QPS) load on a web server handling 1,000 queries per second, a comprehensive approach encompassing both network and application levels would be employed.

Issues

1. 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 know see the issue to be honest (I will update this).

2. Why having only one MySQL server capable of accepting writes 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.

3. 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

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