

For every additional element, why you are adding it?

SSL certificate is added to secure the request which is transferred through the HTTP protocol. This makes all the requests that the client sent to the webpage will be encrypted using an encryption algorithm.

3 Firewalls protect the server from dangerous activity by setting defined rules based on ip, port domain names...

Monitoring clients: are added in order to check the infrastructure is working well and to identify which component is malfunctioning. This makes the maintenance procedure straightforward.

What are firewalls for?

Firewalls is a network security device that monitors network traffic, it can be understood as a division or “wall” between a private network and public network which limits and blocks network traffic based on a set of security rules in the hardware or software by analyzing data packets that request entry to the network

Why is the traffic served over HTTPS?

HTTPS prevents websites from having their information broadcast in a way that’s easily viewed by anyone snooping on the network. When information is sent over regular HTTP, the information is broken into packets of data that can be easily “sniffed” using free software. This makes communication over an unsecure medium, such as public Wi-Fi, highly vulnerable to interception. In fact, all communications that occur over HTTP occur in plain text, making them highly accessible to anyone with the correct tools, and vulnerable to on-path attacks.

What monitoring is used for?

Infrastructure Monitoring is used to collect health and performance data from servers, virtual machines, containers, databases, and other backend components in a tech stack. Engineers can use an infrastructure monitoring tool to visualize, analyze, and alert on metrics and understand whether a backend issue is impacting users.

How monitoring tool is collecting data?

IT monitoring is composed of three parts: 1) Foundation; 2) Software, and 3) Interpretation in order to function.

- **Foundation:** Are related to the infrastructure at its lowest layer of the software stack. This includes physical and virtual devices, such as servers, CPUs and VMs.
- **Software:** The software is the monitoring section which analyzes what is happening in the devices (physical or virtual machines) in terms of CPU usage, load, memory, and running count.
- **Interpretation:** Here is where collected data is turned into metrics and are presented through graphs or data charts (mostly on GUI dashboard). This is often integrated with tools of data visualization to help better understand and do data analytics of performance.

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

Queries per second is a measure of the rate of traffic going in a particular server serving a Web domain. It is an important metric to monitor, because it can help you decide whether to scale the server in order to cope with the demand of usage, and resource requirement so the web page won't collapse in the future with overload server requests.

Issues with the secured and monitored web infrastructure?**Why having only one MYSQL server capable of writes is an issue?**

Because if the master server goes down the client won't be able to save, update, delete to the database.

Why terminating SSL at the load balancer level is an issue?

SSL termination at load balancer has its own pros and cons. Decrypting the request at load balancer helps to reduce the amount of work that the server is going to perform and it helps to deeply look into the decrypted file to distribute the requests with their priority. Even if it sounds all good terminating ssl at load balancer makes the requests vulnerable but it depends on the security of the data centers.

Why having servers with all the same components (database, web server and application server) might be a problem?

Assuming your web server gets compromised the attacker will still gain the credential to access the same databases, no matter what server they run on. After all, the database server will still need to be configured to allow legitimate request from the web server.