



Network Diagram

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Team Hobby:

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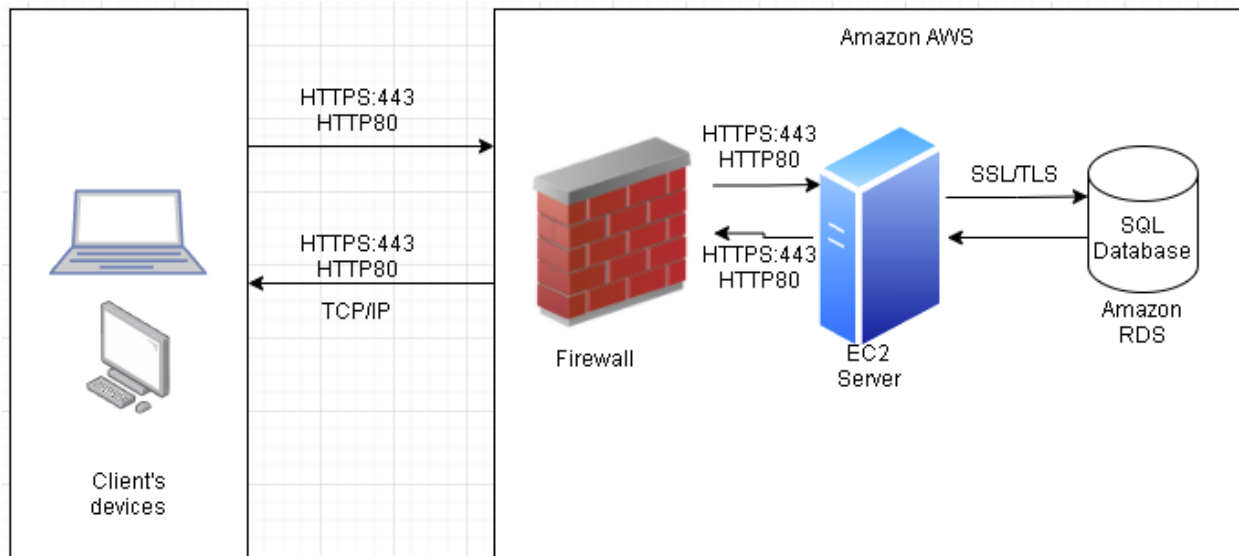
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1 Network Diagram



2 Protocol

2.1 HTTP:

Stands for Hyper Text Transfer Protocol. HTTP protocol makes up most of the communication between clients and servers on the internet. The client's browser generates an HTTP request to the server. The server then responded to the client using an HTTP response.

2.2 HTTPS:

Hypertext transfer protocol secure which is HTTP but uses SSL/TLS protocol with certification verification to increase security by preventing man-in-the-middle attacks.

2.3 SSL/TLS:

Uses certificate exchange similar to asymmetric encryption to verify identities of 2 points connections to prevent eavesdropping.

2.4 TCP/IP:

the protocol that is used to communicate between different computers including servers. TCP/IP layers include application, transport, internet, and network with the application being the highest level.

3 Specifications

3.1 EC2 Server:

3.1.1 Hardware specification:

CPU: 1 virtual CPU
RAM: 1GiB RAM
Storage: 30 GB SSD

3.1.2 Operating systems:

Operating system: Ubuntu 20.04 LTS

3.2 Amazon RDS database:

3.2.1 Hardware specification:

CPU: 1 virtual CPU

RAM: 1GB

Storage: 20 GB SSD

4 Connection description

Clients will be limited to only United States of America region. HTTPS requests coming from client devices will be passed through a firewall that will only white list United States of America IP addresses. However, the clients will have to pass through their ISP providers first before being able to access the internet and then to our backend server.

We will be using Lightsail service to host our server provided by Amazon AWS. The EC2 server will be processing client requests through an HTTPS connection on port 443 which implements SSL/TLS to ensure security and HTTP requests on port 80. Communication between the backend server and the SQL Database will be using SSL/TLS connection with certificate verification to ensure that data that we stored in the server are safe.

The server will then send responses to the clients using HTTPS protocol through port 443. Our backend server will be using Apache HTTP 2.4+.

5 References

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