Network Diagram

Team No Stress
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1 Network Diagram Overview

1.1 Purpose

The network diagram provides an overview of the network for our project, What the Food?, and breaks down the overall network flow.

1.2 Google Firebase

Google firebase is the chosen hosting service, since it allows the necessary tools to aid in the development of our app. Specifically the support of a RESTful web application development, the ability to host multiple websites, and easy ability to store and access data to a cloud server are beneficial to our project’s scope.

1.3 Main Web App

The main web app is the point of connection between the users and our network, it will be the main web page that communicates with both the client machine and the microservices in our project. The main web app will be hosted on its own server separate from the microservices, but will communicate with all of them to provide various functions.

1.4 Microservices

1.4.1 Overview

Our web app leverages microservices in order to avoid a monolithic architecture. This allows our app the ability to scale with ease since our different services will be decoupled from one another. This microservice based structure will also allow our main web app to function if there were ever an issue with one of our other services.

1.4.2 Scan/Search

This microservice will handle the scanning and searching of a product image/code that will be given by a user.

1.4.3 Account/Login

This microservice will handle login and account creation requests and will be the main point of contact for user data additions and changes.

1.4.4 AMR (Active Metabolic Rate)

This microservice will handle the user’s personalized AMR; this includes storing the user’s input data into the client information server as well as the calculations required to output their AMR.

1.4.5 History

This microservice will handle our services History feature. This service will access both the client information and food information server.

1.4.6 Food Information

This microservice will handle the display and aggregation of information of the food products. This service will access the food information server.

1.5 Databases

1.5.1 Client Information

This database will store all of the requisite information about our clients.

1.5.2 Food Information

This database will store all of the requisite information about the food products.

1.6 Connection/Ports

1.6.1 HTTPS

HTTPS (Port: 443) will be the connection between our main web app and our clients, this is because this allows a fast and secure connection and it is also the main way that Google Firebase sends and receives information.

1.6.2 AMQP

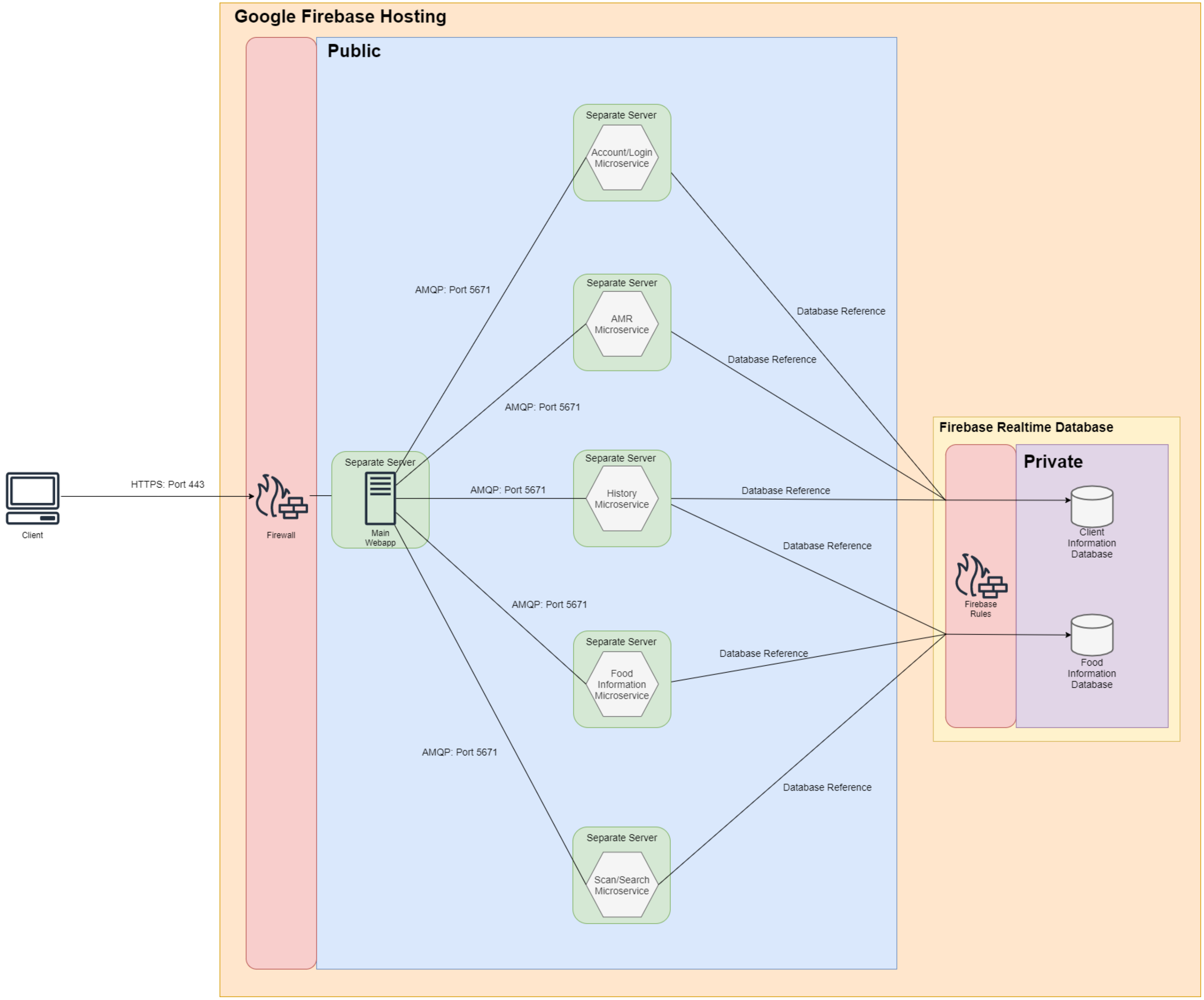
AMQP (Port: 5671) will be the connection between our main web app and our microservices since it provides us with an asynchronous connection, allowing our main web app to function without having to wait for a response from the microservices. Furthermore, AMQP is supported by many message brokers, therefore, if the need arises in the future, we will be able to smoothly transition into using a message broker.

1.6.3 Database Reference

Since we are using Google Firebase as our hosting site, we are able to access our database through data references within the server side’s code.

1.6.4 Firewalls

The main firewall for our network will be between our client and our main web app. This firewall will filter geographically, stopping any IP address outside of the US from accessing our website. Between our microservices and databases there are rules that will be set determining how we can access and what can be accessed from our database. These rules come as a functionality of using Google Firebase, providing us with a layer of security for our database.


Google Firebase Hosting
Public
Separate Server
Account/Login Microservice
Separate Server
AMR Microservice
Separate Server
History Microservice
Separate Server
Food Information Microservice
Separate Server
Scan/Search Microservice
Separate Server
Main Webapp
Client
HTTPS: Port 443
Firewall
AMQP: Port 5671
AMQP: Port 5671
AMQP: Port 5671
AMQP: Port 5671
AMQP: Port 5671
Database Reference
Database Reference
Database Reference
Database Reference
Database Reference
Database Reference
Firebase Realtime Database
Private
Firebase Rules
Client Information Database
Food Information Database