A close up of a map

Description automatically generated

Data flow 1: The MTA makes several requests to the MSA. The MTA: GETS emails from the MSA’s outbox; POSTS emails to the MSA’s inbox; and DELETES emails from the MSA’s outbox.

Data flow 2: The MTA microservice makes a GET request to the Bluebook microservice. It sends a domain name in the url and expects an IP address to be sent in the response.

Data flow 3: Once the MTA has the IP address of the destination server, it POSTS the email to the corresponding MTA microservice.

MSA: Stores a map of users to their inboxes and outboxes. Each user has one inbox and one outbox. The inbox and outbox map message UUIDs to emails. Calls can be made to add (POST), read (GET) and remove (DELETE) emails from both the inbox and outbox. There is also the option to read every email in every user’s outbox at once in order to GET a singular list. This is used by the MTA to send emails across a network.

MTA: This is used to send messages. It first collects all the messages to send from the MSA by using the ReadAllOutbox call. These messages are then found the appropriate IP to send to by using the bluebook’s GetIPAddress method. The messages are then POSTED to the correct MTA using the MTA’s PassToMSA method. The messages are then DELETED from their original outbox using the MSA’s DeleteOutboxMessage method. The function handler waits to receive messages from other MTA’s with the PassToMSA method. This method then sends all messages it receives to the appropriate inbox in the MSA using its AddToInbox method.

Bluebook: Offers a lookup table between domain names and IP addresses. A microservice can send a domain name to it and GET the corresponding IP address in the response.