

Spring of Emails

We want to create a restful service that listens, collects, counts and serves email addresses. This service will get high loads of traffic.

Design a restful API that will accept XML data. This endpoint will be the bulk data feeder for the service. Request XML will contain emails and/or urls. The fetched url can also return new XML of the same structure. Every XML can contain unlimited number of emails and urls.

The request XML will look like this:

```
1  <?xml version="1.0"?>
2  <dataset>
3    <emails>
4      <email>user1@comeon.com</email>
5      <email>user2@comeon.com</email>
6      <email>user3@not-so-cool.com</email>
7    </emails>
8    <resources>
9      <url>http://test.com/new-xml</url>
10     <url>http://test.com/duplicate-emails</url>
11     <url>http://test.com/duplicate-emails</url>
12   </resources>
13 </dataset>
```

Service should also fetch data from fed resource urls. Urls may return XML that contain new urls, fetching should continue until all url resources are finished. XML structure is always the same.

Must-haves

Your implementation must:

- Fetch data from external urls
- Drop invalid emails and unwanted domains (wanted domains are comenon.com and cherry.se)
- Count and persist how many times an email is encountered, in five minutes batches

- After five minutes of first data feed, persist emails/ counts and close batch. Start the new batch at next incoming data
- Provide API to retrieve the emails and corresponding counts
- Provide API to retrieve an email's count

Bonuses

If you believe you did your best at must-haves, here are some bonuses you can work on. Implement any number of bonuses you want, as long as your time allows.

- Make your implementation multi-instance, meaning it can run at n number of servers with the same results
- Provide API for CRUD operations on a single email resource
- Implement retry with a configurable limit while fetching urls
- Return a result summary of request XML as a response from bulk feeder endpoint