
Software Requirements Specification

for

dogPile Email Client

Version 1.3

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1. Introduction

1.1 Purpose

The purpose of this SRS document is to detail the requirements of our customer (TA) for the creation of an email client web application. The email client will need to perform the functionalities of being able to allow users to login with their own account to access their emails, along with the capability of being able to compose, edit, add attachments, send composed email, search and forward select emails to other users through a website or web application.

1.2 Document Conventions

This SRS document is typed in Arial font, size 11 italicized for section description information. Section and subsection headers are typed in size 18 and size 14 font, respective to their section position. Priorities for higher-level requirements are assumed to be inherited by detailed requirements, or whether every requirement statement is to have its own priority.

1.3 Intended Audience and Reading

This document is intended for developers, project managers, marketing staff, users, testers, and documentation writers as a set of information to describe the project requirements that will need to be met, along with a description of the project. The order of this document should follow and be read in its entirety from section 1 through to the end of section 5.

1.4 Product Scope

This product will function as a web based email client that will have a unique login and experience for any user that will access the email client. Users will be able to compose, edit and send an email to any user they so choose, with the added ability to add attachments (images/files). Users will additional be able to search their existing emails to either read, respond, forward or delete a selected message. The intent is to first work towards the high-priority functional requirements, then expand to additional goals once the product is functional.

1.5 References

TBD

2. Overall Description

2.1 Product Perspective

The purpose of this email client is to provide a functional and web-based email service to its users. The user interface will be compatible with modern web browsers, such as Google Chrome, Safari, Mozilla Firefox, Microsoft Edge.

The product is new and will interface with the users selected email provider, using traditional email communication protocols.

2.2 Product Functions

The product will provide the user with traditional email client functionality such as the following:

- 1) creation of user account for client access*
- 2) sending and receiving emails through securely integrating with network-based email service provider*
 - a. compose & edit email body text*
- 3) user authentication/secure connection to network-based email services*
- 4) message management*
 - a. forwarding*
 - b. deleting*
- 5) sending and receiving/opening attachments*
- 6) search messages*

2.3 User Classes and Characteristics

The product will support user class (USER) and admin class (SUPER). The authorization of the users will be dictated by the email service provider. The USER will have the ability to manage and update the configuration as well as manage the noted functionality in the feature list that is supported by the service provider. The SUPER user will have the ability to manage USER account authentication and authorization.

2.4 Operating Environment

The product will operate within a modern web browser supporting imap protocol for integration with network-based email services. Hardware and OS will not impact the execution of the product.

2.5 Design and Implementation Constraints

Attachment size

Connection to internet

- Speed of internet connection will impact the user experience (responsiveness of the application)*

Support for TLS 1.2 and higher

3. System Features

3.1 USER account creation

3.1.1 Description and Priority

User will be able to create account within the email client web application. The account will hold user credentials and email server connectivity configuration information. The system will then walk USER through the email server integration process.

Priority – 9

Risk – 4

3.1.2 Stimulus/Response Sequences

Welcome screen to allow login or account creation. Account creation will create account and then walk USER through the email server integration pages/screens/process. Process details yet to be finalized.

3.1.3 Functional Requirements

REQ-1: confirm uniqueness of proposed username

REQ-2: confirm proposed password meets complexity requirements

REQ-3: create user entry in account 'database'

REQ-4: connect/integrate with email server using USER email account credentials provided in configuration process.

3.2 USER/SUPER account login

3.2.1 Description and Priority

User will be able to login into the account the email client web application. The account authentication process will confirm the identity and authorization of the user through matching of the username and password stored in the 'database'. Authentication of account will expire after a prescribed amount of time has transpired. The amount of time is TBD.

Priority – 9

Risk – 4

3.2.2 Stimulus/Response Sequences

Welcome screen to allow login or account creation. Login will receive input into login form and confirm veracity of credentials and once confirmed, the USER will be displayed the email Inbox view/screen, and the SUPER will be presented with the administrator view.

3.2.3 Functional Requirements

REQ-1: form to receive USER credentials
REQ-2: authentication of USER credentials

3.3 USER account password reset (forgotten password)

3.3.1 Description and Priority

User will be able to request a password reset. Password reset process -TBD

*Priority – 7
Risk – 5*

3.3.2 Stimulus/Response Sequences

Welcome screen to allow USER to request a reset of their password. SUPER account password will not be allowed to be reset through the forgotten password process.

Process has been to be defined

3.3.3 Functional Requirements

REQ-1: form to receive USER credentials

3.4 Compose email

3.4.1 Description and Priority

USER while in the Inbox view, will be able to compose new email message.

*Priority – 9
Risk – 4*

3.4.2 Stimulus/Response Sequences

From the Inbox view, the USER will click the 'compose' button and be presented with a window to enter the following information:

*Recipient address
Subject
Body text
Inclusion of attachment(s)*

Once the information has been entered the USER will click the send button, the window will close and the message will be put into the outbox of the account.

3.4.3 Functional Requirements

REQ-1: Window and form to receive message details

REQ-2: ability to attach files to message

REQ-3: outbox folder for holding outbound email messages

3.5 USER read email message

3.5.1 Description and Priority

User will be able to click and email in the Inbox and have it open to present full visibility of the message body/content. If an attachment is included in the message an appropriate icon will be presented to the USER within the message view (TBD).

Priority – 8

Risk – 4

3.5.2 Stimulus/Response Sequences

From the Inbox view/screen, the USER will be able to view all messages in their Inbox on the server. The USER will then click a message in the list and the specific message will be displayed in the viewing screen/window.

3.5.3 Functional Requirements

REQ-1: Listing of all emails in the USER inbox on the server
- imap integration

REQ-2: Download of email message from server for presentation to USER

REQ-3: identification of file attachment

3.6 USER forward email message

3.6.1 Description and Priority

USER will be able to send to another address an email message that they received into their inbox.

Priority – 9

Risk – 4

3.6.2 Stimulus/Response Sequences

While in the Inbox view, the USER is able to select a message and then click the forward button. Once the button is clicked, a view/screen is presented to the USER to enter in the recipient, edit the subject, edit/add content to the body of the message, and add an attachment. Once information has been entered the USER will click the send button and the message will then be moved to the outbox.

3.6.3 Functional Requirements

REQ-1: Open a form with prepopulated fields (subject, body, attachment).

REQ-2: build email message and move into outbox.

3.7 USER reply to email message

3.7.1 Description and Priority

USER will be able to reply to an email message that they received into their inbox.

Priority – 9

Risk – 4

3.7.2 Stimulus/Response Sequences

While in the Inbox view, the USER is able to select a message and then click the “reply to” button. Once the button is clicked, a view/screen is presented to the USER to enter in the recipient, edit the subject, edit/add content to the body of the message, and add an attachment. Once information has been entered the USER will click the send button and the message will then be moved to the outbox.

3.7.3 Functional Requirements

REQ-1: Open a form with prepopulated fields (recipient, subject, body, attachment).

REQ-2: build email message and move into outbox.

3.8 USER download attachment

3.8.1 Description and Priority

The USER will be able to select and download individual attachment files from within an email message.

Priority – 6

Risk – 2

3.8.2 Stimulus/Response Sequences

From within the read view/screen, the USER will double click the attachment icon which will trigger the process to download the attachment. If there are multiple attachments, each attachment must be individually selected for download.

3.8.3 Functional Requirements

REQ-1: identify attachment with an email

REQ-2: utilize browser functionality to download a file.

3.9 Send email message

3.9.1 Description and Priority

For all emails in the Outbox of an account, the client application will trigger the sending of emails to the server for processing.

Priority – 8

Risk – 4

3.9.2 Stimulus/Response Sequences

A populated Outbox and the expiration of a timer triggers the sending of messages to the email service for processing.

3.9.3 Functional Requirements

REQ-1: Timer/scheduler

REQ-2: Secure connection to email service

3.10 Receive email message

3.10.1 Description and Priority

Upon expiration of a timer, the client application will poll the email service for updates to the Inbox of the USER.

Priority – 9

Risk – 4

3.10.2 Stimulus/Response Sequences

The expiration of the Timer will trigger the update of the Inbox which will 'receive' new inbound emails.

3.10.3 Functional Requirements

REQ-1: Listing of all emails in the USER inbox on the server
- IMAP integration

3.11 Search email message

3.11.1 Description and Priority

From the Inbox view/screen, the USER can click within the 'Search' box on the screen and enter in text for the system to look for within messages. The scope of the search has not been determined yet.

Priority – 6

Risk – 6

3.11.2 Stimulus/Response Sequences

From the Inbox view/screen, the USER will be able to enter text into the search field. Once the USER clicks 'Search', the client will identify and present only messages with the specified text in the message.

3.11.3 Functional Requirements

- REQ-1: Listing of emails in the USER inbox on the server
 - IMAP integration
- REQ-2: text search/pattern match

4. Other Nonfunctional Requirements

4.1 Performance Requirements

The performance of the application is dependent upon the speed of the internet connection of the user. The responsiveness of the application will need to be reasonable for the user experience to meet the customer expectations.

4.2 Safety Requirements

Since this is a web-app, there are 'safety' concerns/requirements beyond what is identified in the Security Requirements.

4.3 Security Requirements

User and system configuration data will be encrypted at rest and in transit. Account Database will have passwords encrypted within the database itself using at least SHA-256 algorithm. Login/authentication process will be resilient enough to withstand variant data entry and test the veracity of the entered data.

4.4 Software Quality Attributes

The web-app, while hosted in the cloud, will be accessed through client-based browsers. The application will need to be able to be used using the latest (n+1) version of the industry standard web browsers. The ones that will be supported are:

- Google Chrome*
- Apple Safari*
- Mozilla FireFox*
- Microsoft Edge*

Depending on deployment, the web-app availability will be targeted for 95%. Upon testing, the application could reach as high as 99%. Running the web-app in a multiple server environment running a blue-green maintenance rotation.

5. Other Requirements

Light-weight database for storage of user information

Appendix A: Glossary

- *SHA-256 : Cryptographic hash function that outputs a value that is 256 bits long.*
- *SMTP: Simple Mail Transfer Protocol*
- *IMAP: Internet Message Access Protocol*

Appendix B: Analysis Models

N/A

Appendix C: To Be Determined List

1. *References*
2. *Access timeout. The amount of time a user can be in the system until they will need to reauthenticate.*
3. *Password reset process*
4. *How the inclusion of an attachment in a message is presented*