This Note describes the specifications required to build VaultasticActiveStoreMailUpload API-SDK.

VaultasticActiveStoreMailUpload API-SDK's objective:

   1. Add JSON as the first line of the mail without replacing any content of the mail.
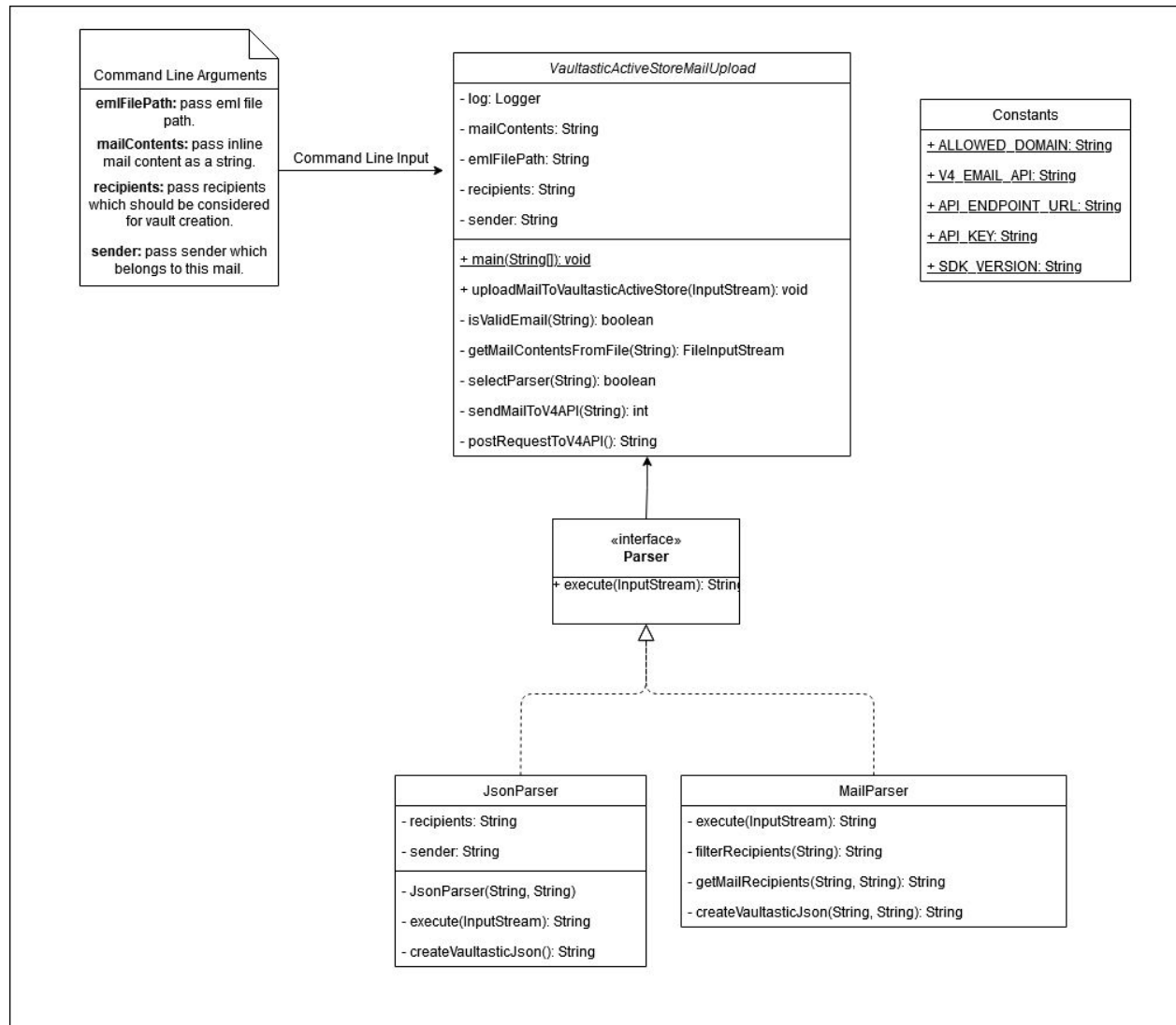
   Example JSON: {"sender": "Ideolve Notifications <notifications@ideolve.com>", "serverip": "169.254.70.237", "mailreceivedtime": 1611822905, "uuid": "cff04f43-1643-405a-83b4-abb6093d12d5", "mailroutertype": "VaultasticV4-API", "recipient": "bhushan.wawre@mithi.com,ravi.ranjan@mithi.com"}

   2. Upload Mail to VaultasticActiveStoreMailUpload API using pre signed URL.

   Reference:
https://docs.aws.amazon.com/AmazonS3/latest/dev/PresignedUrlUploadObject.html

VaultasticActiveStoreMailUpload API-SDK Class-Diagram:

Member Functions Explained:

   1) VaultasticActiveStoreMailUpload:

     a) uploadMailToVaultasticActiveStore(InputStream):

       - This is a public function that accepts InputStream Object ie. mailContent.

       - It directly calls the "execute" function of MainParser class and passes mailContent as an argument.

       - It then calls sendMailToV4API with String returned by the "execute" function.

       - It checks the Response Code returned by sendMailToV4API function:

         if 204 -> log("mail successfully uploaded to S3") and exit with code 0.

         else log("Error uploading mail to s3") and exit with code 5.

     b) isValidEmail(String):

- This function accepts String Object ie. userEmailId.
- It checks the validity of email Id:
  if valid returns True.
  else returns False.

c) getMailContentsFromFile(String):
- This function reads mailContent from a given file path.
- Returns FileInputStream for the input filePath.

d) selectParser(String, String):
- This function accepts arguments recipients and sender passed by command line.
- This function dynamically selects parser based on:
  if recipients and sender are passed as argument return JsonParser object.
  else return MailParser Object.

e) postRequestToV4API():
- This function does a post request to V4-API with the following headers:
    'x-api-key': Constants.API_KEY,
    'User-Agent': Constants.SDK_VERSION
- This function returns the Response.

f) sendMailToV4API(String):
- This function accepts String argument ie. modifiedMailContent.
- It calls postRequestToV4API, It extracts URL and fields from the response.
- It sets the form-data exactly as it was in fields in response.
- It also sets the file field in form-data with modifiedMailContent.
- It makes a post request to the URL extracted from the response.
- It returns the Response Code of the post request.

g) the main function:
- This function will take input from the command line.
- This function should call selectParser and sendMailToV4API functions.

2) Parser:
  a) execute(InputStream):
    - This is a public empty function.

3) JsonParser:
  a) JsonParser(String, String):
    - This function accepts String arguments ie. recipients and sender.
    - It sets the class variables recipients and sender passed as an argument.
  b) createVaultasticJson(String, String):

- This function accepts String objects ie. recipients and sender.

- This function returns a String representation of JSON with the following values:

{"sender": sender, "serverip": <public ip of server>, "mailreceivedtime": <current epoch time>, "uuid": <random UUID>, "mailroutertype": Constants.V4_EMAIL_API, "recipient": recipients}

c) execute(InputStream):

- This function accepts InputStream object ie. mailContent.

- This function reads mailContent from InputStream and creates a String variable modifiedMailContent by appending mailContent to JSON returned by createVaultasticJson function.

- This function returns the modifiedMailContent which is a String representation of mailContent with JSON being the first line of the mail.

4) MailParser:

a) filterRecipients:

- This function accepts String object ie. mailObject.

- This function parses mailObject to get all recipients present on the following headers:

to, from, sender, cc, bcc.

- It filters the recipients which have a domain equal to Constants.ALLOWED_DOMAIN.

- It returns the filtered recipients as comma-delimited String.

b) getMailRecipients(String, String):

- This function accepts String objects ie. mailObject and headerName.

- This function parses mailObject and returns the value of header which matches headerName present in mailObject.

c) createVaultasticJson(String, String):

- This function accepts String objects ie. recipients and mailObject.

- It calls the getMailRecipients function to get the value of the "from" header, if the "from" header not present get the value of the "sender" header.

- This function returns a String representation of JSON with the following values:

{"sender": sender, "serverip": <public ip of server>, "mailreceivedtime": <current epoch time>, "uuid": <random UUID>, "mailroutertype": Constants.V4_EMAIL_API, "recipient": recipients}
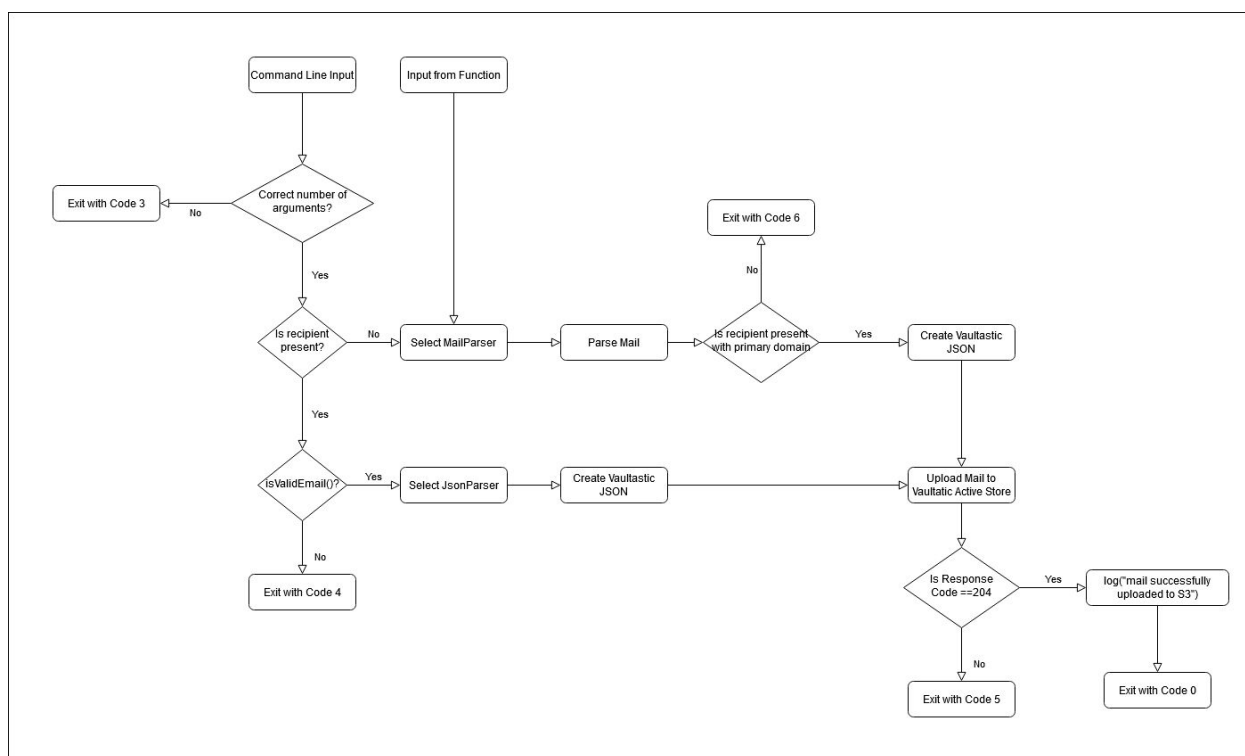
d) execute(InputStream):

- This function accepts InputStream object ie. mailContent.

- This function reads mailContent from InputStream and creates a String variable modifiedMailContent by appending mailContent to JSON returned by createVaultasticJson function.

- This function returns the modifiedMailContent which is a String representation of mailContent with JSON being the first line of the mail.

5) Constants:

- ALLOWED_DOMAIN: get from the environment variable "PRIMARY_DOMAIN".

- V4_EMAIL_API: "VaultasticV4-API"

- API_ENDPOINT_URL: get from the environment variable "API_ENDPOINT_URL".

- API_KEY: get from the environment variable "API_KEY".

- SDK_VERSION: "VaultasticActiveStoreMailUploadSDK/1.0.2"

VaultasticActiveStoreMailUpload API-SDK Flow Diagram:

For VaultasticActiveStoreMailUpload-API-SDK below are the Exit Codes and Messages.

Sr No.	Exit Code	Descriptions	Resolution
1.	0	Mail Successfully uploaded to S3.	-

2.	1	Unknown Exceptions.	This is the exit code returned when there is no other specific exit code defined for the error that occurred. More Information can be found in the message/stack trace printed by python.
3.	2	Misuse of shell builtins (UNIX reserved error)	Missing keyword or command, or permission problem (and diff return code on a failed binary file comparison).
4.	3	Invalid no. of arguments.	invalid no. of arguments passed. please provide at least -i or -m
5.	4	Invalid Recipient mail ID.	Invalid Recipient Email ID. make sure the id passed on -r argument is a correct email id (or email id's comma separated).
6.	5	Failed to Upload mail to S3	Mail Failed to upload to s3 bucket. Check Error logs for the failed message.
7.	6	Recipients not found matching provided PRIMARY_DOMAIN value.	Recipients not found for the matching PRIMARY_DOMAIN value. 1. Check if PRIMARY_DOMAIN is correct, or 2. Check if any user exist in mail headers (from, to, cc, bcc) matching PRIMARY_DOMAIN value, or 3. Provide user with -r parameter for which the mail needs to be indexed.

The command-line arguments are as follows:

    EmlFilePath is the path of the EML file.

    MailContents is the mail contents passed as a string.

    Recipients are the comma-separated list of ids on the primary domain

    Sender is an id on the primary domain

Note:

Following parameters are required for v4-Email-API irrespective of language implementation:

    1. Environment Variables:

        a) PRIMARY_DOMAIN:- primary domain name for filtering vaults from the mail.

        b) API_ENDPOINT_URL:- V4-Email-API Endpoint URL.

c) API_KEY:- API KEY shared for uploading mail to v4.

2. User should only pass any one of the parameters but not both: MailContents and EmlFilePath (In case if the user passes both parameters EmlFilePath will be considered for processing irrespective of order or passed value.)

3. Following are the limitations of SDK V1.0.2:

a) Multi-Domain Not supported:

Recipients filtering based on multiple PRIMARY_DOMAIN not supported.

4. For Troubleshooting:

should be able to set environment variable LOGGING_LEVEL = DEBUG.

- This will enable debug logs for all functions for better troubleshooting.

Limitations:

a) Rate Limits: 10,000 Requests per second with 5000 Burst requests. (API Gateway Default rate limit)

b) Max Mail Size: 50MB

c) Max No. of attachments in a mail: No Limit (up to Max Mail size).

d) Max attachment size: No limit (up to Max Mail size).

e) Time of execution:

Max TIme: should not be greater than 10 seconds.

Avg time: should be less than 5 seconds.