Mail²ZOS

Concepts and Facilities

z/OS

Release 1.1

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Contents

Mail2ZOS

Overview:

Mail2ZOS provides a z/OS system with the capability to receive (or retrieve) email messages with their attached data files into the mainframe, store the data into host files, and submit jobs to process the data, and finally; send email notices to keep appropriate people informed of the operations.

The Problem:

How to empower users, without mainframe skills, to get externally sourced data into the mainframe, initiate processing, and get results; without having to impose on mainframe operational staff resources at every step.

Today a variety of mechanisms are used to send data files to the mainframe. Some methods are direct, but run into security issues, and some indirect, but only move the data to a holding area where someone else has to take over. So, the first challenge is how to get the data into host files and available for mainframe operations.

The next step usually involves operations staff or programmers using TSO to modify JCL and submit jobs to initiate jobs to processing the newly updated files. Finally, operations staff must then wait for completion of activities, take appropriate action and notify responsible groups. It's a costly process that eats up both human resources and elapsed time.

The challenge is how to initiate the entire mainframe processing cycle – from data transfer, data decrypting, updating of JCL parameters, and sending/receiving processing notifications – from outside the mainframe using simple, everyday technologies and methods – and in the process leverage operational human resources and reduce operational costs.

The Solution:

The most convenient way to move data around is email. The simplicity to "send and forget"; the elegance of the store and forward transport mechanism: and the universality of support on nearly every known computing platform makes email the ideal way to transport data. **Mail2ZOS** allows data files to be emailed to the mainframe.

The principal functions of **Mail2ZOS** are to:

- Receive email "as an SMTP (post office) server"
- "Pick up" email from any number of POP3 servers
- Decode attached files and store them into MVS datasets
- Perform actions on the body or attachments:
  - o Save to a host file and submit a job to process
  - o Write the file to JES as a SYSOUT (printout)
  - o "Wrap" JCL around the data and submit for execution
  - o Dynamically compose a job stream (JCL) and submit it for execution.
- Send email notifications to keep appropriate people informed
- Use the script language for more extensive processing of the message body (cover page) and attachments.

Flow of Data


Mail2zOS
Email and DataFile flow
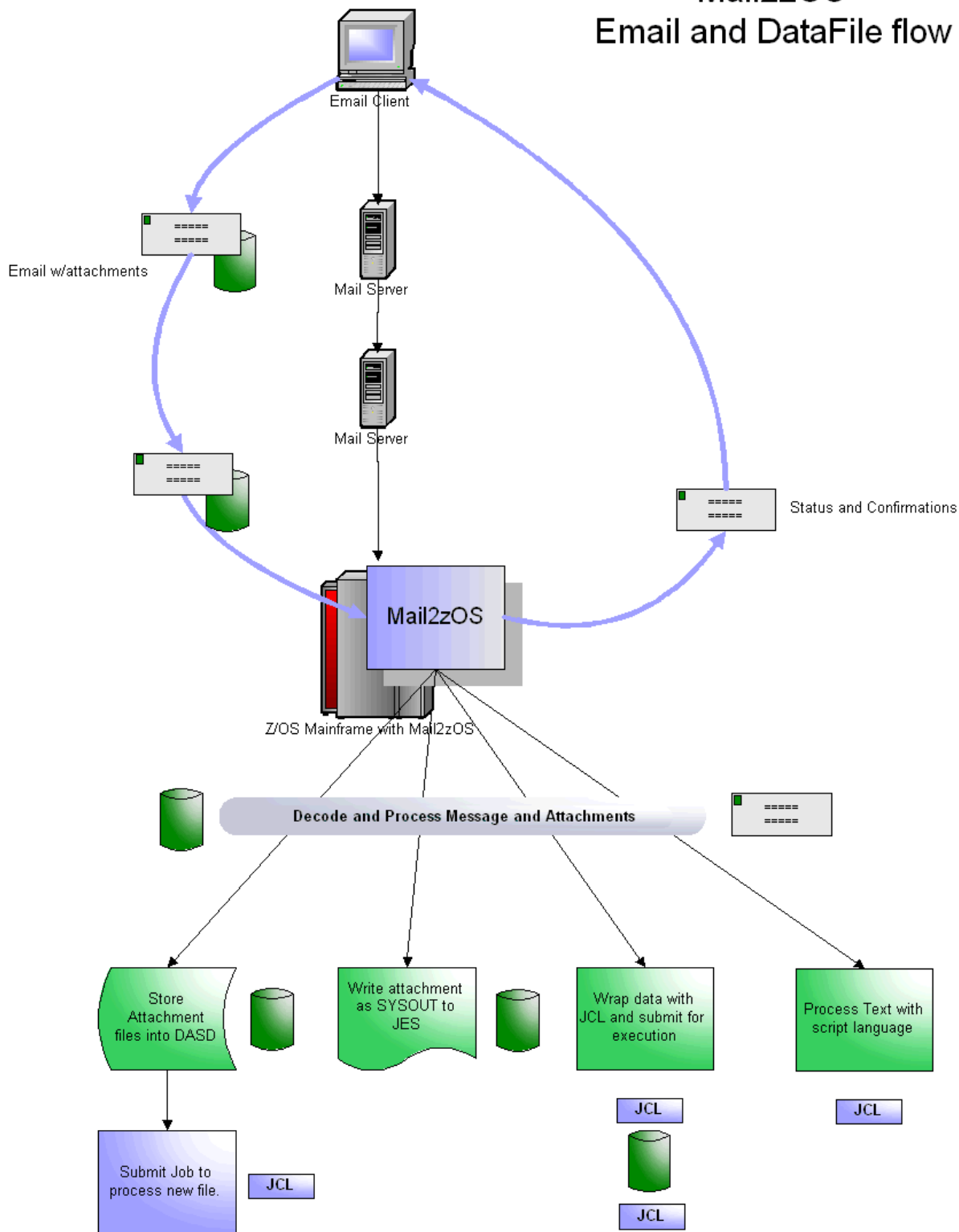
Features:

- ➢ Run as Batch step or Started Task
- ➢ Listen for and receive email as an SMTP server
- ➢ Retrieve email from any number of POP3 servers
- ➢ Safely store the raw email on the host HFS for processing
- ➢ Parse the email, separating the message body from attachments
- ➢ Allow specific processing for individual attachments
- ➢ Handle Binary Attachments:
  - o Write as "blob" for "pure" binary data streams
  - o Parse out fixed length records
  - o Support RDW for variable length records
- ➢ For message "body" and text attachments
  - o Translate from ASCII to EBCDIC
  - o Save to fixed length (with padding) or variable length files
  - o "De-edit" comma (or tab) delimited files into fixed fields
  - o Sanitize unwanted characters, such as removing control chars
  - o Transform data to upper or lower case
- ➢ Create unique filenames for the stored MVS filename
- ➢ Symbolic variable substitution
  - o Insert the new "unique" filename into the JCL of the job being submitted
  - o Conditional logic to dynamically alter the JCL being submitted
  - o Symbolic variables include system related variables and most variables associated with the email, such as From, Subject, attachment filename, etc.
- ➢ Write files to JES as a SYSOUT
  - o Most of the parameters from the JES OUTPUT statement are supported
- ➢ "Wrap" JCL around a data file and submit it for execution
- ➢ Dynamically compose a job stream (JCL) and either submit it directly, or store it in a data file for later execution, (by a job scheduling system)
- ➢ Send email notices of messages processed and actions performed

- ➤ Support primary and backup post offices for sending notices
- ➤ TSO Notify for key events
- ➤ Five levels of tracing for very detailed or very summarized logging of activity
- ➤ "Pass" the text attachments or message body directly to a script for more extensive operations
- ➤ Script Language Support
  - o High level script language
  - o Can process the message body (cover page) or text attachment file directly
  - o Perform table lookups to externalize processing data, i.e.: passwords or the like
  - o Text processing functions to:
    - ▪ Search and extract data lines for contents
    - ▪ Parse data elements from text line
    - ▪ Integer arithmetic
    - ▪ String functions help manipulate data values
  - o Can dynamically create a job stream, more than just submitting a "static" job stream
  - o Job streams can be submitted to internal reader or created in a new unique file for later submission and execution.
  - o Dynamically create email notices
  - o Can invoke DLL routines in C, COBOL or Assembler to do additional operations. For example, after creating a job in a file, a DLL routine could link to a job scheduler to schedule the newly created job for execution.

Mail2ZOS with JES2Mail

While **Mail2ZOS** is all about "receiving and processing" email, JES2Mail is all about sending reports via email. Here is a flow of an application that received requests via email to update a database, which in turn generates output that is sent back to the original requestor.
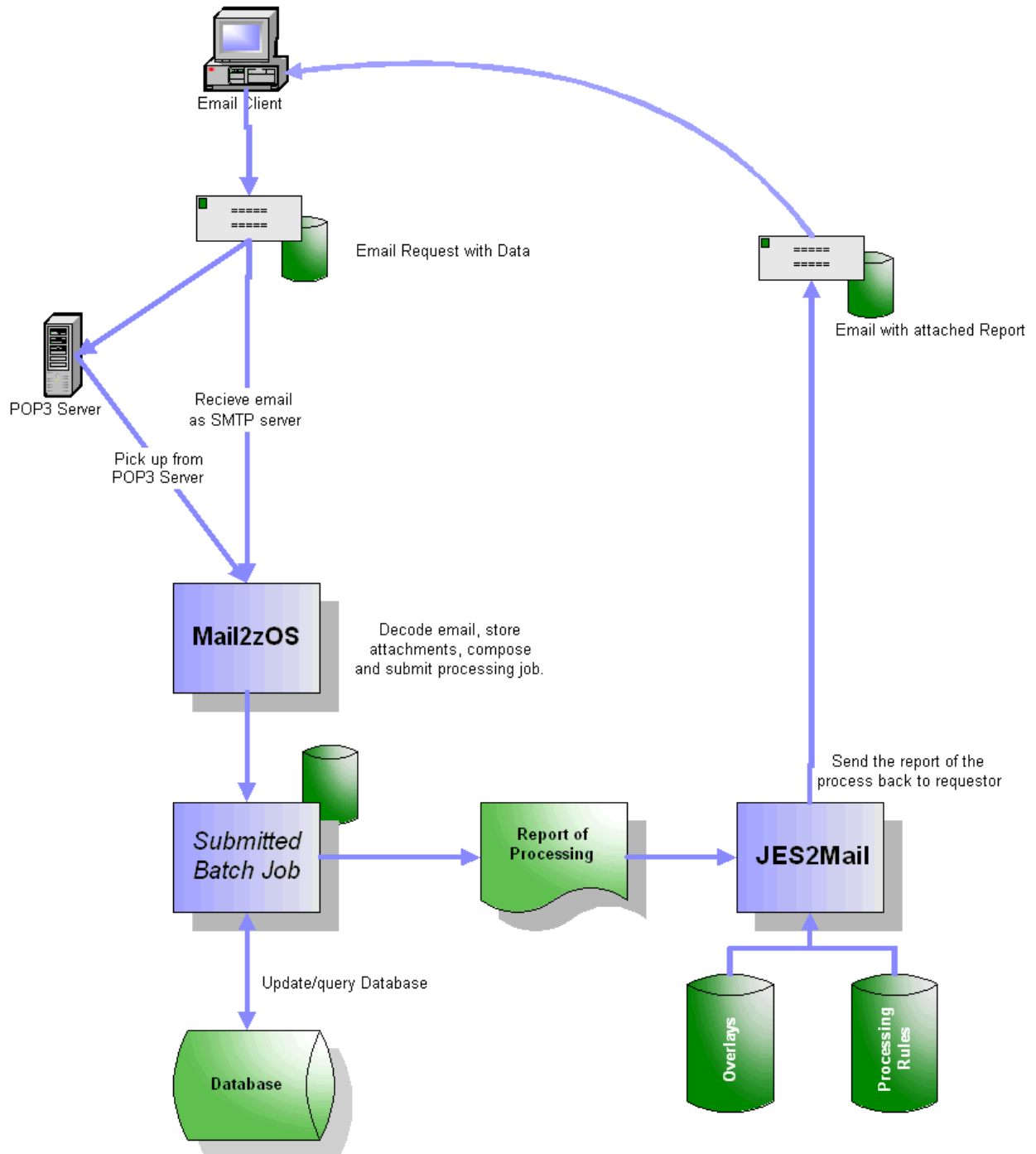
Summary

Legacy mainframe applications continue to perform mission-critical processing while the overall number and knowledge level of mainframe user and technical human resources continue to shrink through retirement and overseas outsourcing. Organizations need to develop methods, processes and to further leverage this shrinking mainframe knowledge and skill base.

Mail2ZOS is an innovative use of an everyday technology like email for data updating and application processing, further leveraging an organizations' mainframe knowledge and skill base.

Please visit www.casisoft.com/m2zhome.html for more information, or contact us by email at info@casisoft.com or by telephone at 714-378-1109.