

MailFlux

A Mail Server for Experts
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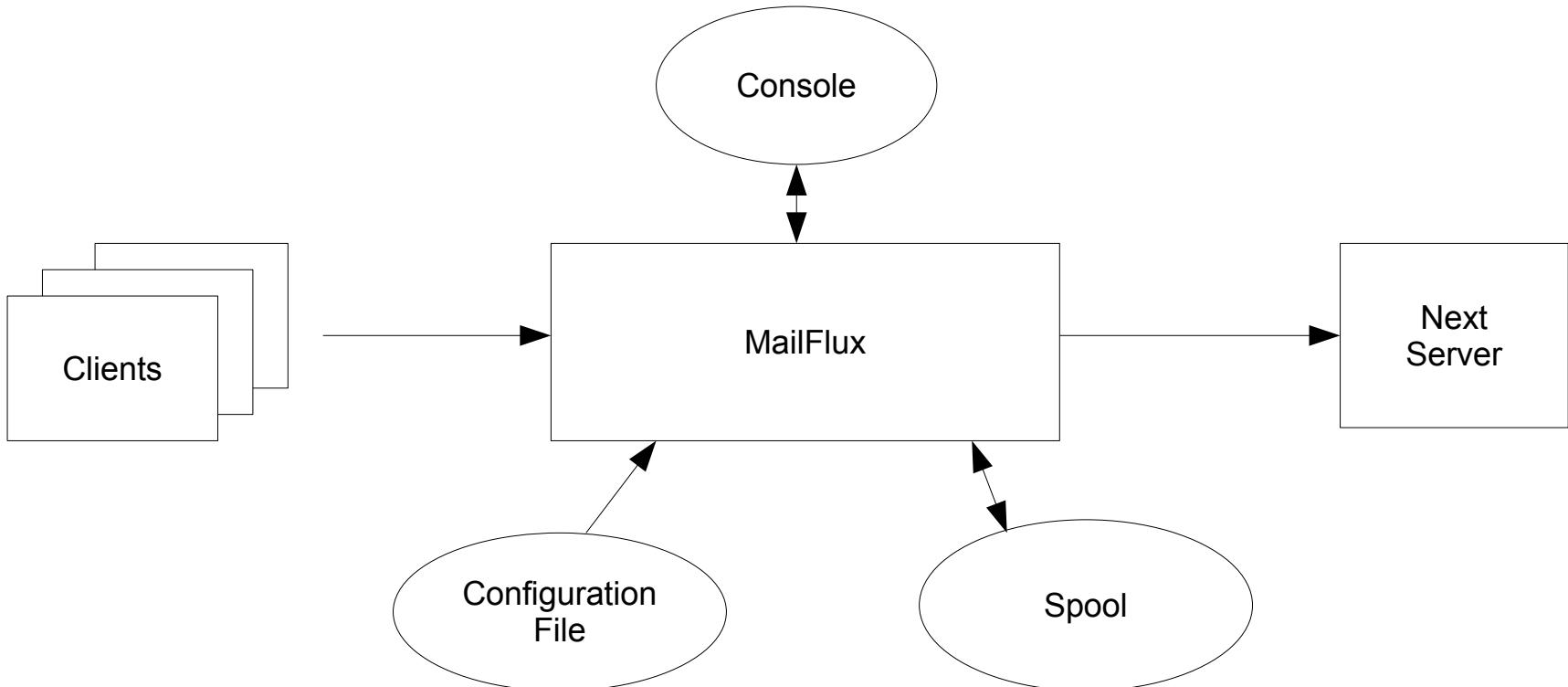
What MailFlux?

- MailFlux...
 - Is the SMTP server portion of the MailVision project.
 - Provides insight into the workings of SMTP servers.
 - Useful for students learning mail protocols.
 - Useful for administrators debugging mail problems.
 - Useful for individuals who need a personal mail server.
 - Displays information about mail activity in real time.
 - Allows user interaction
 - Statistics
 - Analysis
 - Reconfiguration

Platforms

- MailFlux runs on limited platforms right now.
 - Official support for Linux.
 - Probably runs on other POSIX-based systems.
 - Not tested outside of Linux, but support for macOS planned.
 - Would require significant work to run on Windows.
 - Uses POSIX threads
 - Uses POSIX sockets API
 - Uses curses
- Code written in Standard C++ 2020
 - Java version is also under construction

Externally Visible Architecture



Clients

- MailFlux is a concurrent server
 - SMTP conversations can be long.
 - Large mail messages.
 - Multiple mail messages.
 - Slow (confused?) clients.
 - Uses a threading approach.
 - One thread loops waiting to accept new clients.
 - Separate thread for each client.
 - ServerConnection
 - Each client handled by an instance of this class.

Console

- Interaction with human user.
 - Message display region.
 - Shows information about SMTP transactions in real time.
 - Shows debugging information.
 - Asynchronous.
 - Output from multiple threads interleaved on a line-by-line basis.
 - Interaction region.
 - Executes in its own thread.
 - Shows command prompt.
 - User can reconfigure MailFlux as it runs.
 - User can query statistics and other information.
 - Currently only “quit” command implemented!

Next Server

- MailFlux is a forwarding server.
 - All messages it receives are passed on to another server for delivery (or further forwarding).
 - No local delivery support at this time.
 - Still useful...
 - Statistics
 - Filtering
 - Local control
 - Currently only one “next server” allowed.
 - Uses a `ClientConnection` instance when acting as a client (talking to the next server)

Configuration File

- Used to specify default options.
 - Location of message spool (on disk)
 - Name of the next server
 - Listening port.
- Options can be overridden by command line or changed dynamically by user.
 - Current not implemented!

Message Spool

- Storage area on disk where received messages are placed.
 - Each message is stored with its sender and recipient list.
 - Spool handling thread wakes up every 15 seconds and tries to forward all spooled messages to the next server.
 - Creates `ClientConnection` instances to do this.

Contact

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