EMBEDDING MORE MAIL TRANSFER AGENT (MTA) FUNCTIONALITIES IN SENDMAIL

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ABSTRACT

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As a mail transfer agent, Sendmail performs the customary functions of MTAs. It performs three key mail transport functions. First, it routes mail across the Internet to a gateway of a different network. Second, it relays mail to another MTA on a different subnet within the same network. Lastly, it transfers mail from one host or server to another on the same network subnet. This study aims to enhance Sendmail by embedding other MTAs features. This study implements two features to enhance Sendmail, namely, the sender's privacy utility and the email group list manager.

The protection of privacy is considered as one of the most important concerns on the Internet today. One way to protect one's privacy in email is through assuming an anonymous identity or a pseudonym as a sender of that mail. The rationale behind this is anonymity is touted as the savior of personal freedom necessary to ensure liberty in an era of increasingly sophisticated surveillance.

Email group management is of another concern of any MTA. Dealing with email group list is no small feat. As a manager of a group, the responsibility of maintaining that group is burdensome. A way to properly handle such groups effectively is through employing a mailing list manager.

Aside from the implemented features, the project team includes a conceptual implementation of two other features, modularity and mechanism to block specific users.

CHAPTER I

INTRODUCTION

1.1 Background of the Study

Electronic mail, popularly called email, is a computer-based method of sending messages from one computer user to another. It has become a powerful tool and favored method in modern communication. It is usually written using one of the many Mail User Agents (MUAs) available on the market. Examples of MUAs are Eudora, Outlook, and Lotus Notes. In order to transfer mail messages from one computer system to another, a Mail Transfer Agent (MTA) is needed. One of most popular MTAs used by organization nowadays is Sendmail, a Unix default MTA.

When the Internet was in its infancy, Sendmail was one of the few tools suitable for moving large amounts of mail. It has been the mail transfer agent of choice for many TCP/IP intranets and mail servers used by different organizations as well. Its core duty, like other MTAs, is to safely move email between hosts, usually utilizing the *Simple Mail Transfer Protocol* (*SMTP*). It requires third-party mail delivery agents (MDA) like procmail to deliver local mail to local mail directories.

As both the Internet and corporate intranets grew in popularity, Sendmail went along for the ride, all the while being continually upgraded by the Sendmail Consortium and implemented by the likes of Sun and IBM. When Eric Allman created it in the early 1980s, its success was not perceived, thus, it has to be constantly upgraded to correct

and add or modify its existing features. In the early 1990's, older versions of Sendmail were vulnerable to a variety of exploits, the most common being the buffer overflow. Since Sendmail runs with root privilege, the consequences of it running an unauthorized program can be quite severe. Hackers can run commands on systems without logging into it.

However, other MTAs have experienced these kinds of vulnerabilities at varying degrees. In order to effectively utilize MTAs, their strengths can be use as the basis of enhancing other MTAs, which lack these features. Thus, this study focuses on embedding more MTA functionalities in Sendmail.

1.2 Statement of the Problem

The study will address the problem of how to enhance Sendmail through embedding more MTA functionalities.

The study will deal with the following minor problems:

- What are the features of Sendmail?
- What are the features of other MTAs?
- How can these features be used to improve Sendmail?

1.3 Objectives of the Study

The study aims to enhance Sendmail through embedding other MTA functionalities.

Specifically, the study aims to:

- Identify the features of Sendmail;
- Identify features of other MTAs; and
- Use these features from other MTAs to improve Sendmail.

1.4 Scope and Limitation of the Study

The study focuses on the identification of the features of Sendmail. In addition to this, it also covers the evaluation of the features of other MTAs, such as Postfix, Qmail, Exim and Courier-MTA in order to identify other possible features that can be used to enhance Sendmail.

The study is limited in implementing only the identified features from other MTAs to enhance Sendmail.

1.5 Significance of the Study

The project team believes that their study is significant due to the following reasons:

- The enhancement that will be implemented will be beneficial to organizations or individuals who personally make use of Sendmail as their Mail Transfer Agent.
- The enhance Sendmail version will be employing features that came from other MTAs that are believed to be their salient characteristics.
- The enhancement will also offer convenient and easier ways a user can manage and utilize Sendmail and its components.

Due to these reasons, the project team deems that their study is noteworthy and beneficial to others.