**Internet Message Access Protocol Secure - Research**

Technical:

Internet Message Access Protocol Secure, IMAPS, is a protocol that serves as a form of email retrieval. The protocol can access both emails and bulletin board messages from a mail server/service over a Transmission Control Protocol/ Internet Protocol connection; the aforementioned connections are oftentimes referred to as TCP and IP. IMAPS allows users to use email client programs to sync with the needed email server. Furthermore, “email stored on an IMAP server can be manipulated from a workstation at the office, a desktop computer at home or a notebook computer while traveling, without requiring the transfer of messages or files back and forth between these computers” (*Definition of Internet Message Access Protocol (IMAP) - Gartner Information Technology Glossary*, n.d.).

IMAPS acts between the email server and the email client, meaning that the designated user would be reading their emails off of the server when IMAPS is in use. The emails are not downloaded to the device itself, so users can access these emails from varying locations such as smartphones, laptops, tablets, etc. While messages do not download automatically, the user can click on the intended message to start the download process. This makes for a quicker, improved way of checking email messages. To enable the process of IMAPS, one should complete the following steps:

* “When a user signs into the email client -- e.g., [Microsoft Outlook](https://www.techtarget.com/searchwindowsserver/definition/Microsoft-Outlook) -- the client contacts the server using IMAP.
* The connection is made on a specific port.
* The headers of all emails are displayed by the email client.
* IMAP only downloads a message to the client when the user clicks on it; attachments are not automatically downloaded.
* Users can check their messages much more quickly with IMAP than with other email retrieval protocols, like Post Office Protocol 3 ([POP3](https://www.techtarget.com/whatis/definition/POP3-Post-Office-Protocol-3)).
* Email messages remain on the server unless the user explicitly deletes them” (Awati, 2021).

IMAP typically uses Port 143 as the default port for unencrypted pathways, while IMAPS uses Port 993 to connect securely. The security aspect of Port 993 makes it so the port is more so advised. Port 993 works over Transport Layer Security (TLS)/ Secure Sockets Layer (SSL) encryption.

Dovecot, an open-source email server, operates as a self-optimizing means of support. This mail delivery agent has varying features such as high security and performance. To install a Dovecot server, use the following command:

“sudo apt install dovecot-imapd dovecot-pop3d

[In order] to configure Dovecot, edit the file /etc/dovecot/dovecot.conf and its included config files in /etc/dovecot/conf.d/. By default all installed protocols will be enabled via an include directive in /etc/dovecot/dovecot.conf.

!include\_try /usr/share/dovecot/protocols.d/\*.protocol ” (*Mail - Dovecot*, n.d.)

Hardening:

1. Email Archiving

Archiving emails can be used to clean up space on the IMAPS server, and bettering the overall performance of the system. Archiving emails can prevent those without access from interacting with the emails through access controls and other security features. “Email applications will generally have an archiving function. For example, in Microsoft Outlook, AutoArchive can automate the archiving task for you, checking regularly for mail that is older than X months and archiving it to be stored locally on your computer. This Microsoft article describes how to use the "AutoArchive" function in Outlook:

[https://support.office.com/en-us/article/AutoArchi...](https://support.office.com/en-us/article/AutoArchive-settings-explained-444bd6aa-06d0-4d8f-9d84-903163439114)” (*FAQs - Interact Partners, Penrith, Cumbria*, n.d.).

2. Disabling Plain Text Authentication

The disabling of plain text authentication within IMAPS can further the security of a service by lessening the chance of attacks on the system. Without the disabling of plain text, a system’s login credentials are more at risk. Instead, one can use an authentication protocol such as Kerberos.

To download and install the Kerberos KDC package use: “rpm -ivh krb5-server-1.10.3-10.e16\_4.6.x86\_64.rpm” (*How to Install the Kerberos Authentication Service*, n.d.). One must "verify that the following rpm packages are installed before configuring KDC:

$ rpm -qa | grep -i krb5

pam\_krb5-2.3.11-9.el6.x86\_64

krb5-server-1.10.3-10.el6\_4.6.x86\_64

krb5-workstation-1.10.3-10.el6\_4.6.x86\_64

krb5-libs-1.10.3-10.el6\_4.6.x86\_64

Install via yum. On the KDC server:

yum install krb5-server krb5-libs krb5-auth-dialog

On the Kerberos client:

yum install krb5-workstation krb5-libs krb5-auth-dialog” (*How to Install the Kerberos Authentication Service*, n.d.).

3. Enable SSL/TLS Encryption

To provide a safer, encrypted, means of communication between the client and the server one can change the SSL/TLS settings by accessing the configuration files (conf.d/10-ssl.conf) for Dovecot and then doing the following:

1. “ssl = yes
2. ssl\_cert = </etc/ssl/certs/dovecot.pem
3. ssl\_kep = </etc/ssl/private/dovecot.pem”

(*Dovecot SSL Configuration — Dovecot Documentation*, n.d.).

The first command facilitates the encryption for SSL/TLS between the client and the server. The second command shows the location of the SSL/TLS certificate file. The third command shows the location of the key file.

References

Awati, R. (2021, September 28). *IMAP (Internet Message Access Protocol)*. WhatIs.com. https://www.techtarget.com/whatis/definition/IMAP-Internet-Message-Access-Protocol

*Definition of Internet Message Access Protocol (IMAP) - Gartner Information Technology Glossary*. (n.d.). Gartner. <https://www.gartner.com/en/information-technology/glossary/imap-internet-message-access-protocol>

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*FAQs - Interact Partners, Penrith, Cumbria*. (n.d.). Interact Partners - Web Design Cumbria. https://www.interactpartners.com/faqs/how-do-i-minimise-my-server-storage-space-requirement-when-using-imap-email

*How to Install the Kerberos Authentication Service*. (n.d.). https://www2.microstrategy.com/producthelp/Current/InstallConfig/en-us/Content/installing\_kerberos\_authentication\_service.htm

*Mail - dovecot*. (n.d.). Ubuntu. https://ubuntu.com/server/docs/mail-dovecot