**Understanding E-Mails**

Undeterred by the number of times we use, the complexity of sending and receiving emails is rarely thought on (nor really visible) due to much of the complexity being abstracted by the companies in forms of simple, online e-mail services. The commitment for fighting spam messages made it even more so, costing a great deal of efforts for anyone who would like to simply send ***electronic mail messages*** (e-mails).

Electronic mail (or e-mail) can be considered a method or a type of message that is distributed electronically from one party to another. This does not have to be an online process spread across the internet either, as it can happen on a local network or on the same machine (i.e. your VPS) via (usually) a built-in tool. However, when it is necessary to send e-mails over the internet, a lot of components come into play, starting with **message transfer agents**.

**Message Transfer Agent (or Message Transport Agent)**

A “message transfer agent” is an application which actually performs the delivery of (e-mail) messages bound for user(s) both on the same system or located elsewhere (i.e. over the internet or a LAN). An MTA application is usually shipped by default with various Linux distributions and they are used by **e-mail clients** to send messages between *hosts*, usually using the **SMTP protocol**.

### Simple Mail Transfer Protocol (SMTP)

In order to transfer messages between hosts, a common language (i.e. a protocol) needs to be established for them to be able to communicate with each other. Created and standardized decades ago, SMTP has become the way for sending out messages. MTAs, using the SMTP protocol, do the delivery of e-mails.

**Heirloom mailx**

We will be working with **Heirloom mailx**, a fantastic Mail User Agent derived from Berkeley Mail. It provides additional support for several protocols including (but not limited to) IMAP, POP3 and of course SMTP. It will be the tool we use to receive alerts and system warnings.

### Installing mailx

yum -y update

yum install -y mailx

ln -s /bin/mailx /bin/email

### Relay E-Mails How to Set an External SMTP Server to

Vi /etc/mail.rc

set smtp-use-starttls

# set smtp=smtp://smtp.server.tld:port\_number

set smtp=smtp://smtp.office365.com:587

# tell mailx that it needs to authorise

set ssl-verify=ignore

set smtp-auth=login

# set the user for SMTP

set from=business@vigdatos.com

# set smtp-auth-user=user@domain.tld

set smtp-auth-user=business@vigdatos.com

# set the password for authorisation

set smtp-auth-password="Saatwik1$"

set nss-config-dir=/etc/pki/nssdb

### Sending e-mails with mail (or mailx)

Although you could interact with the MTA sendmail directly, having “mailx” installed offers, amongst many other things, loads of simplicity and possible options to configure [in future] when necessary.

Here are some of the available options of **Heirloom mailx**:

* -a **file** Allows you to attach the given file to the e-mail
* -b **address** Sends blind carbon copies to the comma separated e-mail address list
* -c **address** Sends copies to a list of users
* -q **file** Sets the message contents from the given file
* -r **from address** Sets the from address of the e-mail to be sent
* -s **subject** Sets the e-mail subject

For a full list of options please visit the related documentation by clicking [here](http://heirloom.sourceforge.net/mailx/mailx.1.html#2).

<https://www.digitalocean.com/community/tutorials/how-to-send-e-mail-alerts-on-a-centos-vps-for-system-monitoring>

<https://www.hexamail.com/guides/ssltls.htm>

1. First error TLS :: add in mail.rc – set smtp-use-starttls
2. Error Missing "nss-config-dir" variable ::

We need to add tls certificate

1. In security group open ports

SSH (port 22)

HTTP (port 80)

HTTPS (port 443)

1. Install webs server lamp ::

<https://docs.aws.amazon.com/AWSEC2/latest/UserGuide/ec2-lamp-amazon-linux-2.html>

<https://docs.aws.amazon.com/AWSEC2/latest/UserGuide/install-LAMP.html>

1. Yum install httpd
2. sudo systemctl is-enabled httpd
3. sudo yum install -y mod\_ssl
4. cd /etc/pki/tls/certs
5. sudo ./make-dummy-cert localhost.crt
6. comment SSLCertificateKeyFile /etc/pki/tls/private/localhost.key in /etc/httpd/conf.d/ssl.conf
7. sudo openssl genrsa -out custom.key
8. [root@ip-172-31-2-134 certs]# sudo chown root:root custom.key
9. [root@ip-172-31-2-134 certs]# sudo chmod 600 custom.key
10. [root@ip-172-31-2-134 certs]# ls -al custom.key
11. find / -name "cert\*.db"
12. cd /etc/pki/tls/certs
13. wget <https://www.geotrust.com/resources/root_certificates/certificates/GeoTrust_Global_CA.cer>
14. Error initializing NSS: Unknown error -8015(did not able to get the error)
15. echo -n | openssl s\_client -connect smtp.gmail.com:587 | sed -ne '/-BEGIN CERTIFICATE-/,/-END CERTIFICATE-/p' > ~/.certs/gmail.crt >null
16. Unexpected EOF on SMTP connection
17. sudo yum install bind-utils
18. dig google.com mx
19. echo "Your message" | mail -s "Message Subject" -S ssl-verify=ignore -v [rsingh.saurabh@gmail.com](mailto:rsingh.saurabh@gmail.com)
20. My mailx worked after I try to login using browser and allow insecure https connection and mail was sent even there was an issue with certificate
21. IMAP Server Settings

|  |  |  |
| --- | --- | --- |
| **Setting** | **IMAP (incoming)** | **SMTP (outgoing)** |
| **Server** Name | outlook.**office365**.com | **smtp**.**office365**.com |
| Port Number | 993 | 587 |
| Encryption Method | SSL | TLS |

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