

Linux 作業系統實務雙講師課程實作成果

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FTP&MAIL 實作過程與結果

1. vsftpd

```
c4070E021 [執行中] - Oracle VM VirtualBox
檔案 機器 檢視 輸入 裝置 說明

CentOS Linux 7 (Core)
Kernel 3.10.0-957.5.1.el7.x86_64 on an x86_64

Hint: Num Lock on

4070e021 login: root
Password:
Last login: Mon Nov 25 22:55:12 on tty1
[root@4070e021 ~]# dnf info vsftpd
Last metadata expiration check: 0:25:00 ago on Mon 25 Nov 2019 10:36:56 PM EST.
Installed Packages
Name       : vsftpd
Version    : 3.0.2
Release    : 25.el7
Arch       : x86_64
Size       : 353 k
Source     : vsftpd-3.0.2-25.el7.src.rpm
Repo       : @System
From repo  : base
Summary    : Very Secure Ftp Daemon
URL        : https://security.appspot.com/vsftpd.html
License    : GPLv2 with exceptions
Description: vsftpd is a Very Secure FTP daemon. It was written completely from
           : scratch.

[root@4070e021 ~]#
```

2. 編輯/etc/sudoers

```
c4070E021 [執行中] - Oracle VM VirtualBox
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GNU nano 2.3.1 File: /etc/sudoers

##
##      user      MACHINE=COMMANDS
##
## The COMMANDS section may have other options added to it.
##
## Allow root to run any commands anywhere
root    ALL=(ALL)        ALL

## Allows members of the 'sys' group to run networking, software,
## service management apps and more.
# %sys ALL = NETWORKING, SOFTWARE, SERVICES, STORAGE, DELEGATING, PROCESSES, LOCATE, DRIVERS

## Allows people in group wheel to run all commands
#%wheel ALL=(ALL)        ALL

## Same thing without a password
#wheel  ALL=(ALL)        NOPASSWD: ALL

## Allows members of the users group to mount and unmount the
## cdrom as root
# %users ALL=/sbin/mount /mnt/cdrom, /sbin/umount /mnt/cdrom

## Allows members of the users group to shutdown this system
# %users localhost=/sbin/shutdown -h now

## Read drop-in files from /etc/sudoers.d (the # here does not mean a comment)
#includedir /etc/sudoers.d
```

3. 將 user 加入 wheel 群組

```
c4070E021 [執行中] - Oracle VM VirtualBox
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CentOS Linux 7 (Core)
Kernel 3.10.0-957.5.1.el7.x86_64 on an x86_64

Hint: Num Lock on

4070e021 login: root
Password:
Last login: Mon Nov 25 23:05:44 on tty1
[root@4070e021 ~]# gpasswd -a 4070e021 wheel
Adding user 4070e021 to group wheel
[root@4070e021 ~]#
```

4. 安裝 vsftpd

```
c4070E021 [執行中] - Oracle VM VirtualBox
檔案 機器 檢視 輸入 裝置 說明

CentOS Linux 7 (Core)
Kernel 3.10.0-957.5.1.el7.x86_64 on an x86_64

Hint: Num Lock on

4070e021 login: root
Password:
Last login: Mon Nov 25 23:06:53 on tty1
[root@4070e021 ~]# sudo dnf -y install vsftpd
Last metadata expiration check: 0:31:00 ago on Mon 25 Nov 2019 10:36:56 PM EST.
Package vsftpd-3.0.2-25.el7.x86_64 is already installed.
Dependencies resolved.
Nothing to do.
Complete!
[root@4070e021 ~]# _
```

5. 啟動 vsftpd

```
c4070E021 [執行中] - Oracle VM VirtualBox
檔案 機器 檢視 輸入 裝置 說明

CentOS Linux 7 (Core)
Kernel 3.10.0-957.5.1.el7.x86_64 on an x86_64

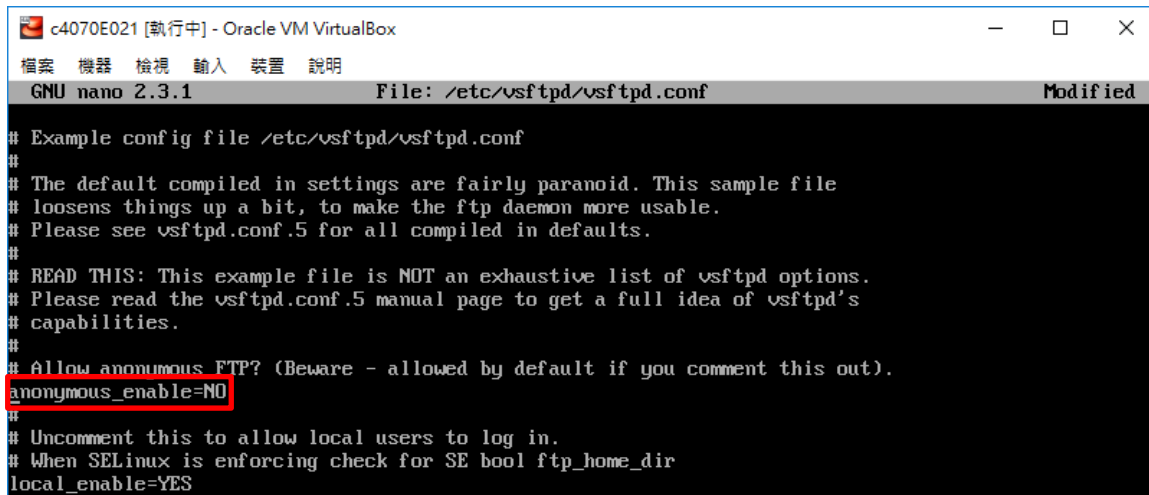
Hint: Num Lock on

4070e021 login: root
Password:
Last login: Mon Nov 25 23:07:34 on tty1
[root@4070e021 ~]# sudo systemctl start vsftpd
[root@4070e021 ~]# systemctl status vsftpd
■ vsftpd.service - Vsftpd ftp daemon
   Loaded: loaded (/usr/lib/systemd/system/vsftpd.service; disabled; vendor preset: disabled)
   Active: active (running) since Mon 2019-11-25 23:09:00 EST; 16s ago
     Process: 5517 ExecStart=/usr/sbin/vsftpd /etc/vsftpd/vsftpd.conf (code=exited, status=0/SUCCESS)
    Main PID: 5518 (vsftpd)
      CGroup: /system.slice/vsftpd.service
              └─5518 /usr/sbin/vsftpd /etc/vsftpd/vsftpd.conf

Nov 25 23:09:00 4070e021 systemd[1]: Starting Vsftpd ftp daemon...
Nov 25 23:09:00 4070e021 systemd[1]: Started Vsftpd ftp daemon.
[root@4070e021 ~]#
```

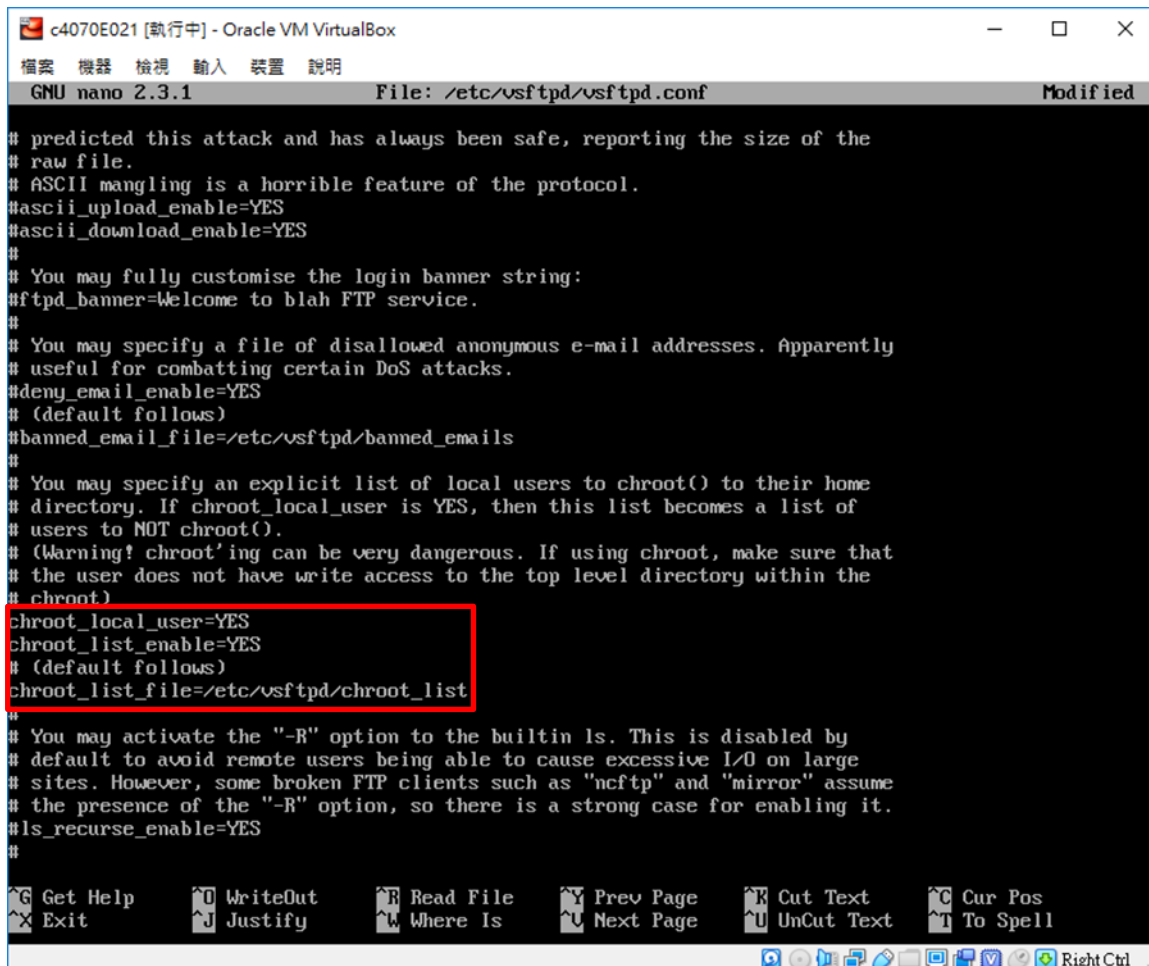
6. 測試 FTP server

7. 編輯 vsftpd.conf



```
c4070E021 [執行中] - Oracle VM VirtualBox
檔案 機器 檢視 輸入 裝置 說明
GNU nano 2.3.1 File: /etc/vsftpd/vsftpd.conf Modified

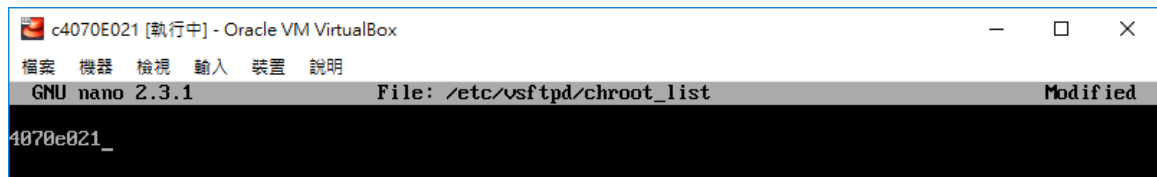
# Example config file /etc/vsftpd/vsftpd.conf
#
# The default compiled in settings are fairly paranoid. This sample file
# loosens things up a bit, to make the ftp daemon more usable.
# Please see vsftpd.conf.5 for all compiled in defaults.
#
# READ THIS: This example file is NOT an exhaustive list of vsftpd options.
# Please read the vsftpd.conf.5 manual page to get a full idea of vsftpd's
# capabilities.
#
# Allow anonymous FTP? (Beware - allowed by default if you comment this out).
anonymous_enable=NO
#
# Uncomment this to allow local users to log in.
# When SELinux is enforcing check for SE bool ftp_home_dir
local_enable=YES
```



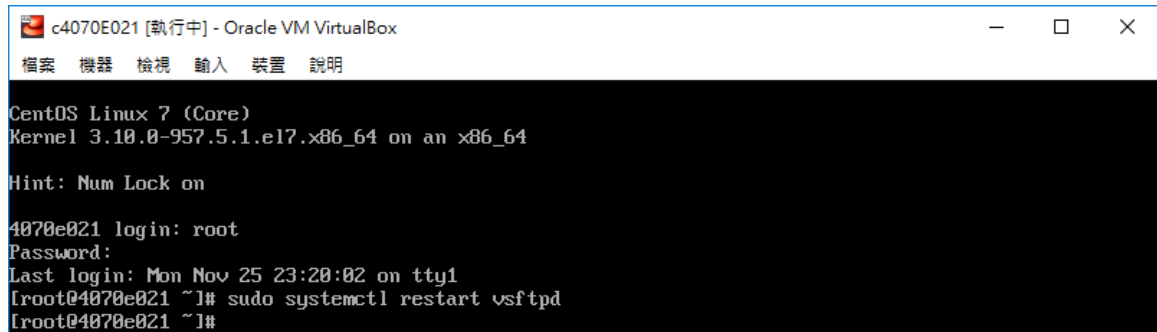
```
c4070E021 [執行中] - Oracle VM VirtualBox
檔案 機器 檢視 輸入 裝置 說明
GNU nano 2.3.1 File: /etc/vsftpd/vsftpd.conf Modified

# predicted this attack and has always been safe, reporting the size of the
# raw file.
# ASCII mangling is a horrible feature of the protocol.
#ascii_upload_enable=YES
#ascii_download_enable=YES
#
# You may fully customise the login banner string:
#ftpd_banner=Welcome to blah FTP service.
#
# You may specify a file of disallowed anonymous e-mail addresses. Apparently
# useful for combatting certain DoS attacks.
#deny_email_enable=YES
# (default follows)
#banned_email_file=/etc/vsftpd/banned_emails
#
# You may specify an explicit list of local users to chroot() to their home
# directory. If chroot_local_user is YES, then this list becomes a list of
# users to NOT chroot().
# (Warning! chroot'ing can be very dangerous. If using chroot, make sure that
# the user does not have write access to the top level directory within the
# chroot)
chroot_local_user=YES
chroot_list_enable=YES
# (default follows)
chroot_list_file=/etc/vsftpd/chroot_list
#
# You may activate the "-R" option to the builtin ls. This is disabled by
# default to avoid remote users being able to cause excessive I/O on large
# sites. However, some broken FTP clients such as "ncftp" and "mirror" assume
# the presence of the "-R" option, so there is a strong case for enabling it.
#ls_recurse_enable=YES
#
Get Help WriteOut Read File Prev Page Cut Text Cur Pos
Exit Justify Where Is Next Page UnCut Text To Spell
Right Ctrl
```

8. 編輯 chroot_list 重新啟動 vsftpd



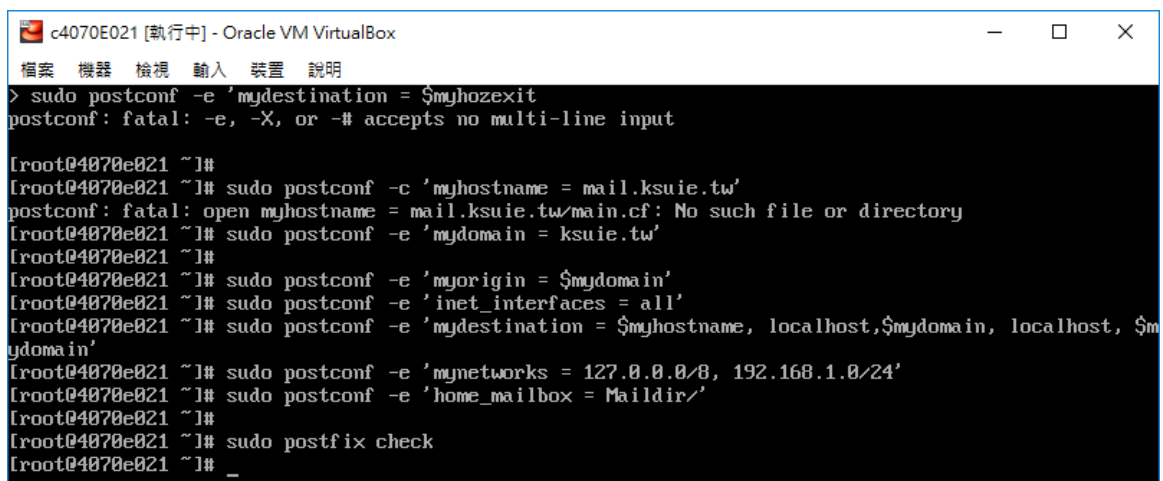
```
c4070E021 [執行中] - Oracle VM VirtualBox
檔案 機器 檢視 輸入 裝置 說明
GNU nano 2.3.1 File: /etc/vsftpd/chroot_list Modified
4070e021_
```



```
c4070E021 [執行中] - Oracle VM VirtualBox
檔案 機器 檢視 輸入 裝置 說明
CentOS Linux 7 (Core)
Kernel 3.10.0-957.5.1.el7.x86_64 on an x86_64
Hint: Num Lock on
4070e021 login: root
Password:
Last login: Mon Nov 25 23:20:02 on tty1
[root@4070e021 ~]# sudo systemctl restart vsftpd
[root@4070e021 ~]#
```

9. 測試 FTP server

10. 編輯/etc/ main.cf



```
c4070E021 [執行中] - Oracle VM VirtualBox
檔案 機器 檢視 輸入 裝置 說明
> sudo postconf -e 'mydestination = $myhostname'
postconf: fatal: -e, -X, or -# accepts no multi-line input
[root@4070e021 ~]#
[root@4070e021 ~]# sudo postconf -c 'myhostname = mail.ksuie.tw'
postconf: fatal: open myhostname = mail.ksuie.tw/main.cf: No such file or directory
[root@4070e021 ~]# sudo postconf -e 'mydomain = ksuie.tw'
[root@4070e021 ~]#
[root@4070e021 ~]# sudo postconf -e 'myorigin = $mydomain'
[root@4070e021 ~]# sudo postconf -e 'inet_interfaces = all'
[root@4070e021 ~]# sudo postconf -e 'mydestination = $myhostname, localhost, $mydomain, localhost, $mydomain'
[root@4070e021 ~]# sudo postconf -e 'mynetworks = 127.0.0.0/8, 192.168.1.0/24'
[root@4070e021 ~]# sudo postconf -e 'home_mailbox = Maildir/'
[root@4070e021 ~]#
[root@4070e021 ~]# sudo postfix check
[root@4070e021 ~]# _
```

11. 建立收信資料夾

```
c4070E021 [執行中] - Oracle VM VirtualBox
檔案 機器 檢視 輸入 裝置 說明

CentOS Linux 7 (Core)
Kernel 3.10.0-957.5.1.el7.x86_64 on an x86_64

Hint: Num Lock on

4070e021 login: root
Password:
Last login: Mon Nov 25 23:38:32 on tty1
[root@4070e021 ~]# mkdir ~/Maildir
mkdir: cannot create directory '/root/Maildir': File exists
[root@4070e021 ~]# chmod -R 700 ~/Maildir/
[root@4070e021 ~]#
```

12. 安裝 dovecot

```
c4070E021 [執行中] - Oracle VM VirtualBox
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Package Arch Version Repository Size
=====
Installing:
dovecot x86_64 1:2.2.36-3.el7_7.1 updates 4.4 M
Installing dependencies:
clucene-core x86_64 2.3.3.4-11.el7 base 528 k

Transaction Summary
=====
Install 2 Packages

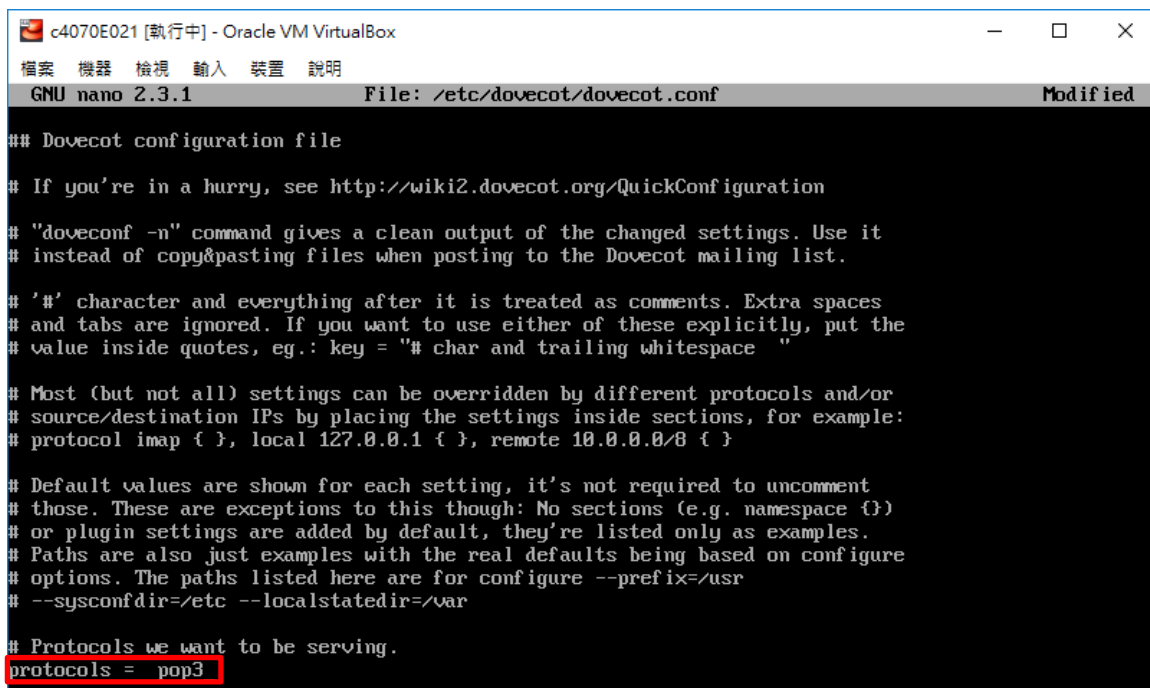
Total download size: 4.9 M
Installed size: 16 M
Downloading Packages:
(1/2): clucene-core-2.3.3.4-11.el7.x86_64.rpm 2.3 MB/s | 528 kB 00:00
(2/2): dovecot-2.2.36-3.el7_7.1.x86_64.rpm 3.5 MB/s | 4.4 MB 00:01
-----
Total 2.2 MB/s | 4.9 MB 00:02

Running transaction check
Transaction check succeeded.
Running transaction test
Transaction test succeeded.
Running transaction
Preparing : 1/1
Installing : clucene-core-2.3.3.4-11.el7.x86_64 1/2
Running scriptlet: clucene-core-2.3.3.4-11.el7.x86_64 1/2
Running scriptlet: dovecot-1:2.2.36-3.el7_7.1.x86_64 2/2
Installing : dovecot-1:2.2.36-3.el7_7.1.x86_64 2/2
Running scriptlet: dovecot-1:2.2.36-3.el7_7.1.x86_64 2/2
Verifying : clucene-core-2.3.3.4-11.el7.x86_64 1/2
Verifying : dovecot-1:2.2.36-3.el7_7.1.x86_64 2/2

Installed:
dovecot-1:2.2.36-3.el7_7.1.x86_64 clucene-core-2.3.3.4-11.el7.x86_64

Complete!
[root@4070e021 ~]# _
```

13. 編輯 dovecot.conf



```
c4070E021 [執行中] - Oracle VM VirtualBox
檔案 機器 檢視 輸入 裝置 說明
GNU nano 2.3.1 File: /etc/dovecot/dovecot.conf Modified

## Dovecot configuration file

# If you're in a hurry, see http://wiki2.dovecot.org/QuickConfiguration

# "doveconf -n" command gives a clean output of the changed settings. Use it
# instead of copy&pasting files when posting to the Dovecot mailing list.

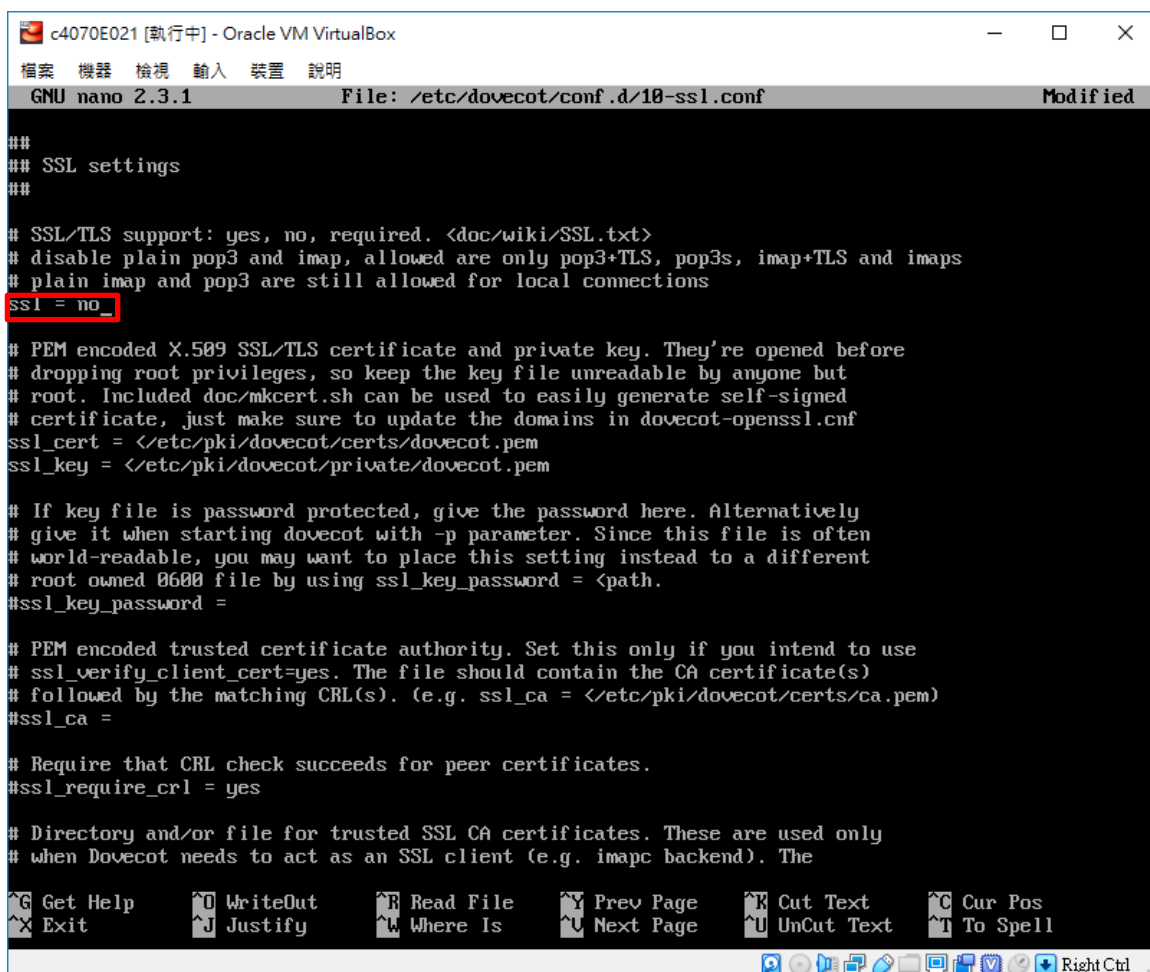
# '#' character and everything after it is treated as comments. Extra spaces
# and tabs are ignored. If you want to use either of these explicitly, put the
# value inside quotes, eg.: key = "# char and trailing whitespace "

# Most (but not all) settings can be overridden by different protocols and/or
# source/destination IPs by placing the settings inside sections, for example:
# protocol imap { }, local 127.0.0.1 { }, remote 10.0.0.0/8 { }

# Default values are shown for each setting, it's not required to uncomment
# those. These are exceptions to this though: No sections (e.g. namespace {})
# or plugin settings are added by default, they're listed only as examples.
# Paths are also just examples with the real defaults being based on configure
# options. The paths listed here are for configure --prefix=/usr
# --sysconfdir=/etc --localstatedir=/var

# Protocols we want to be serving.
protocols = pop3
```

14. 編輯10-ssl.conf



```
c4070E021 [執行中] - Oracle VM VirtualBox
檔案 機器 檢視 輸入 裝置 說明
GNU nano 2.3.1 File: /etc/dovecot/conf.d/10-ssl.conf Modified

##
## SSL settings
##

# SSL/TLS support: yes, no, required. <doc/wiki/SSL.txt>
# disable plain pop3 and imap, allowed are only pop3+TLS, pop3s, imap+TLS and imaps
# plain imap and pop3 are still allowed for local connections
ssl = no_

# PEM encoded X.509 SSL/TLS certificate and private key. They're opened before
# dropping root privileges, so keep the key file unreadable by anyone but
# root. Included doc/mkcert.sh can be used to easily generate self-signed
# certificate, just make sure to update the domains in dovecot-openssl.cnf
ssl_cert = </etc/pki/dovecot/certs/dovecot.pem
ssl_key = </etc/pki/dovecot/private/dovecot.pem

# If key file is password protected, give the password here. Alternatively
# give it when starting dovecot with -p parameter. Since this file is often
# world-readable, you may want to place this setting instead to a different
# root owned 0600 file by using ssl_key_password = <path>.
#ssl_key_password =

# PEM encoded trusted certificate authority. Set this only if you intend to use
# ssl_verify_client=yes. The file should contain the CA certificate(s)
# followed by the matching CRL(s). (e.g. ssl_ca = </etc/pki/dovecot/certs/ca.pem)
#ssl_ca =

# Require that CRL check succeeds for peer certificates.
#ssl_require_crl = yes

# Directory and/or file for trusted SSL CA certificates. These are used only
# when Dovecot needs to act as an SSL client (e.g. imapc backend). The
```

15. 編輯10-auth.conf

```
c4070E021 [執行中] - Oracle VM VirtualBox
檔案 機器 檢視 輸入 裝置 說明
GNU nano 2.3.1 File: /etc/dovecot/conf.d/10-auth.conf Modified

###
### Authentication processes
###

# Disable LOGIN command and all other plaintext authentications unless
# SSL/TLS is used (LOGINDISABLED capability). Note that if the remote IP
# matches the local IP (ie. you're connecting from the same computer), the
# connection is considered secure and plaintext authentication is allowed.
# See also ssl=required setting.
disable_plaintext_auth = no
```

```
c4070E021 [執行中] - Oracle VM VirtualBox
檔案 機器 檢視 輸入 裝置 說明
GNU nano 2.3.1 File: /etc/dovecot/conf.d/10-auth.conf Modified

# Time to delay before replying to failed authentications.
#auth_failure_delay = 2 secs

# Require a valid SSL client certificate or the authentication fails.
#auth_ssl_require_client_cert = no

# Take the username from client's SSL certificate, using
# X509_NAME_get_text_by_NID() which returns the subject's DN's
# CommonName.
#auth_ssl_username_from_cert = no

# Space separated list of wanted authentication mechanisms:
# plain login digest-md5 cram-md5 ntlm rpa apop anonymous gssapi otp skey
# gss-spnego
# NOTE: See also disable_plaintext_auth setting.
auth_mechanisms = plain login
```

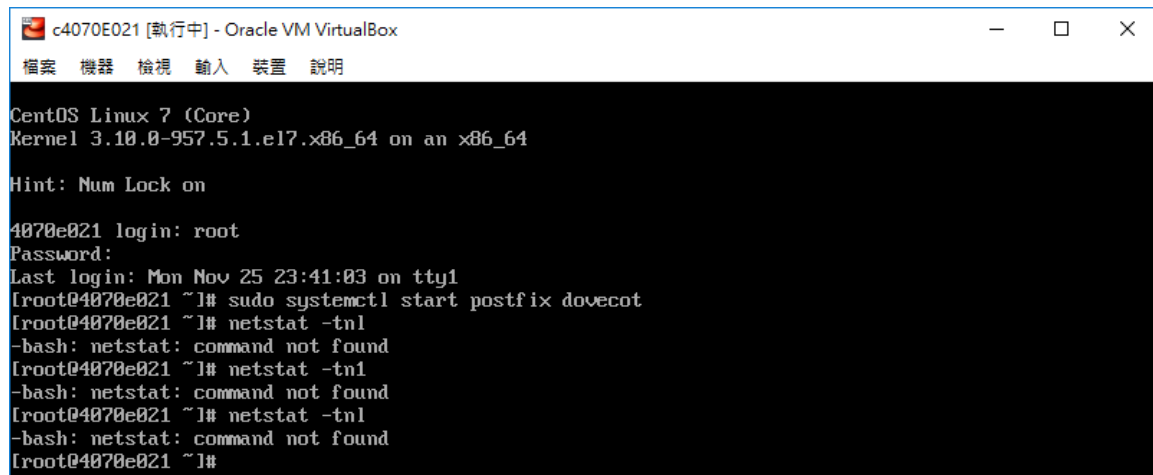
16. 編輯10-mail.conf

```
c4070E021 [執行中] - Oracle VM VirtualBox
檔案 機器 檢視 輸入 裝置 說明
GNU nano 2.3.1 File: /etc/dovecot/conf.d/10-mail.conf Modified

###
### Mailbox locations and namespaces
###

# Location for users' mailboxes. The default is empty, which means that Dovecot
# tries to find the mailboxes automatically. This won't work if the user
# doesn't yet have any mail, so you should explicitly tell Dovecot the full
# location.
#
# If you're using mbox, giving a path to the INBOX file (eg. /var/mail/%u)
# isn't enough. You'll also need to tell Dovecot where the other mailboxes are
# kept. This is called the "root mail directory", and it must be the first
# path given in the mail_location setting.
#
# There are a few special variables you can use, eg.:
#
# %u - username
# %n - user part in user@domain, same as %u if there's no domain
# %d - domain part in user@domain, empty if there's no domain
# %h - home directory
#
# See doc/wiki/Variables.txt for full list. Some examples:
#
# mail_location = maildir:~/Maildir
# mail_location = mbox:~/mail:INBOX=/var/mail/%u
# mail_location = mbox:/var/mail/%d/%1n/%n:INDEX=/var/indexes/%d/%1n/%n
#
# <doc/wiki/MailLocation.txt>
mail_location = maildir:~/Maildir
```

17. 啟動 postfix, dovecot



```
c4070E021 [執行中] - Oracle VM VirtualBox
檔案 機器 檢視 輸入 裝置 說明

CentOS Linux 7 (Core)
Kernel 3.10.0-957.5.1.el7.x86_64 on an x86_64

Hint: Num Lock on

4070e021 login: root
Password:
Last login: Mon Nov 25 23:41:03 on tty1
[root@4070e021 ~]# sudo systemctl start postfix dovecot
[root@4070e021 ~]# netstat -tnl
-bash: netstat: command not found
[root@4070e021 ~]# netstat -tnl
-bash: netstat: command not found
[root@4070e021 ~]# netstat -tnl
-bash: netstat: command not found
[root@4070e021 ~]#
```

18. 新增 email account

19. 寫信寄出給自己

20. Maildir 資料夾內容

21. 收信