

# **Progetto Laboratorio di Amministrazione di Sistema**

Server di Posta Elettronica

Mattia Scarpa

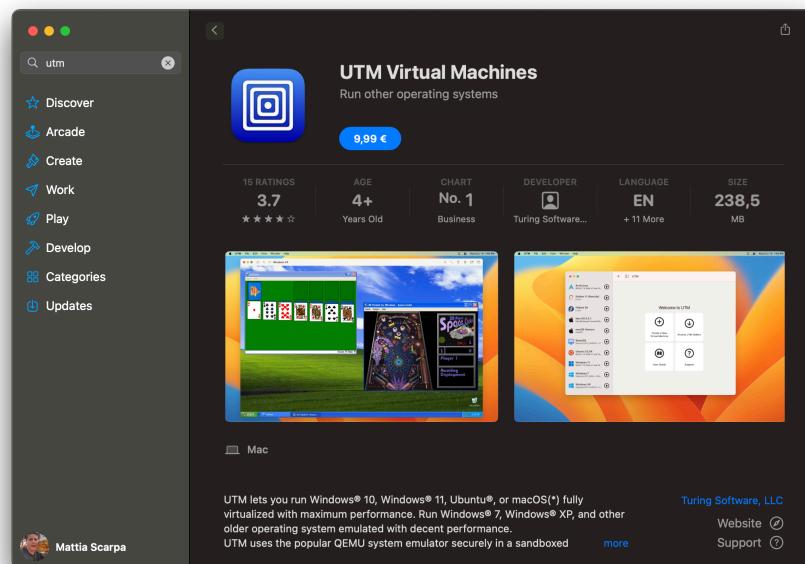
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# Introduzione

Per prima cosa è stato necessario installare uno strumento di virtualizzazione come potrebbe esserlo VirtualBox. Però, avendo un Mac con chip M1, era possibile scaricare solamente la versione beta (7.0.8) e con quest'ultima non si riusciva a far partire la macchina virtuale.

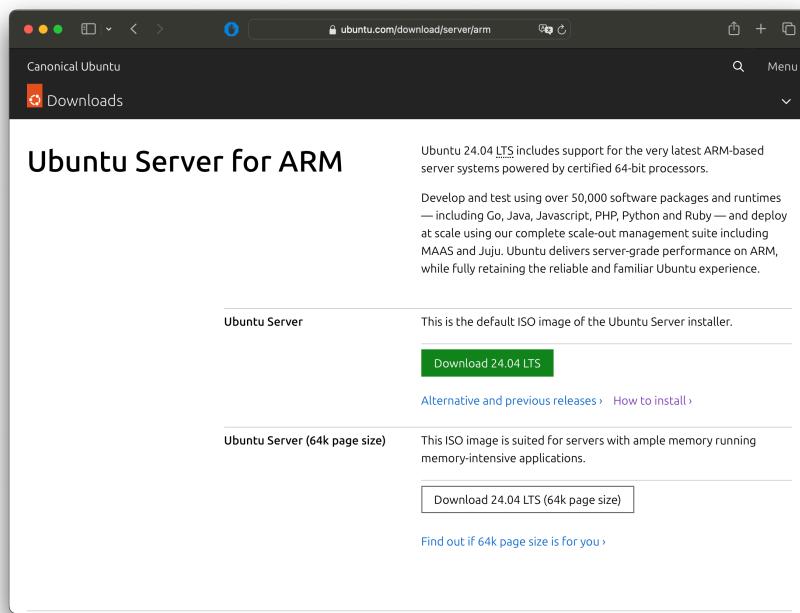
Una soluzione trovata è stata quella di installare il software UTM creato appositamente per la virtualizzazione su macOS (e quindi anche su architettura ARM64).



Una volta installato abbiamo il giusto ambiente su cui lavorare con la nostra macchina virtuale. Ora, in particolare, abbiamo bisogno di un sistema operativo specifico ossia Linux.

# Installazione Ubuntu

Innanzitutto apriamo il terminale del macOS, ci posizioniamo sul desktop/scrivania e digitiamo “`mkdir immagine_iso`” che creerà una cartella con quel nome. Poi, andiamo sul sito ufficiale di Ubuntu per scaricare l'immagine dico o file ISO e lo salviamo sulla cartella precedentemente creata.



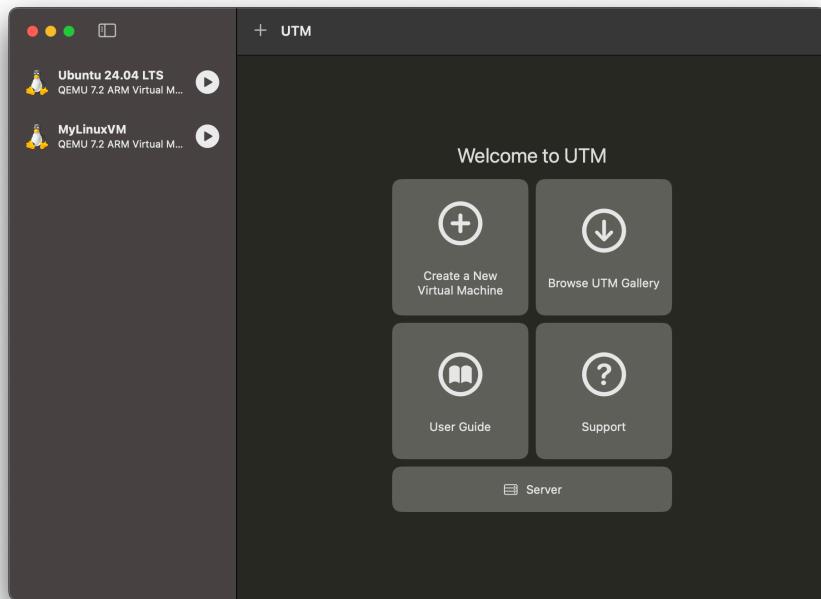
Dobbiamo ricordarci che avendo il chip M1 dobbiamo selezionare la voce “alternative architectures” e andare nella sezione ARM dove installare la versione 24.04 LTS.

Arrivati a questo punto possiamo attivare il nostro software UTM e collegarlo alla nostra immagine.

# Preparazione macchina virtuale

## Su UTM

Dopo aver cliccato sull'icona dell'applicazione si aprirà la seguente facciata dove ci viene chiesto come iniziare.

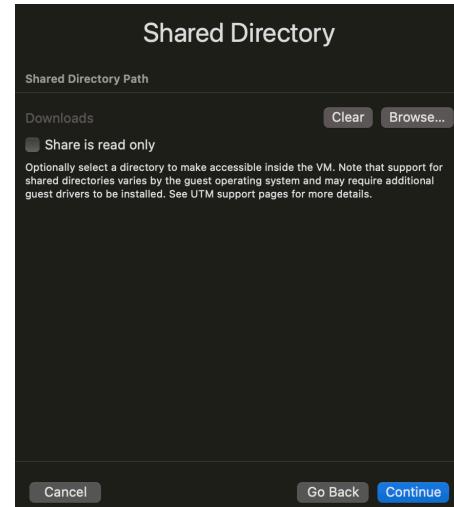
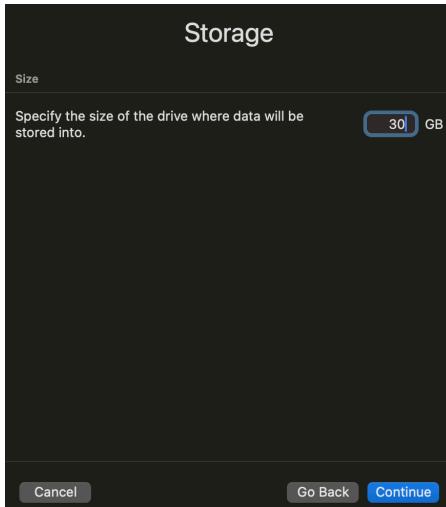
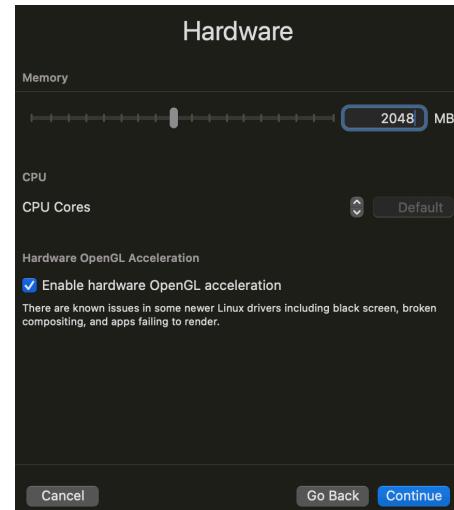
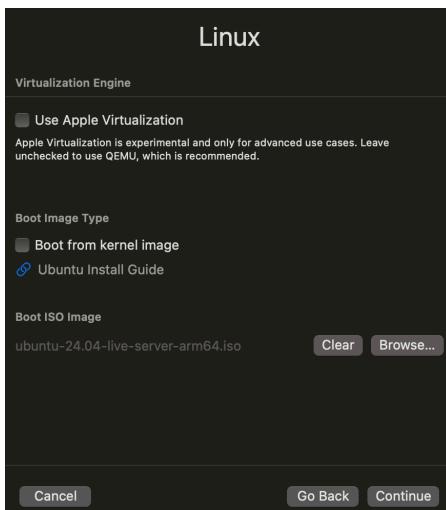
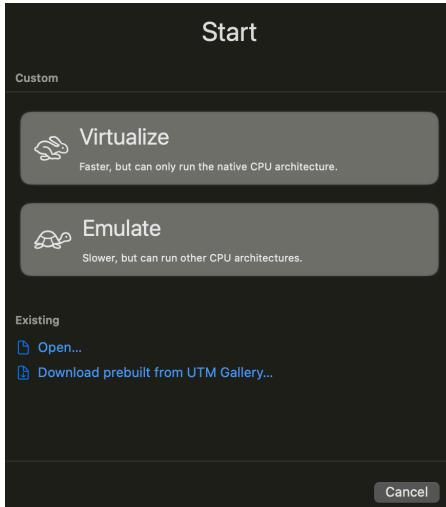


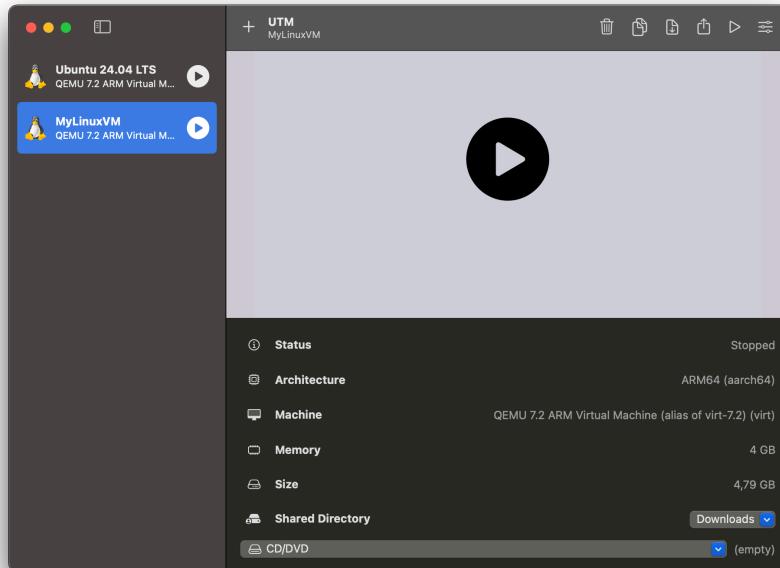
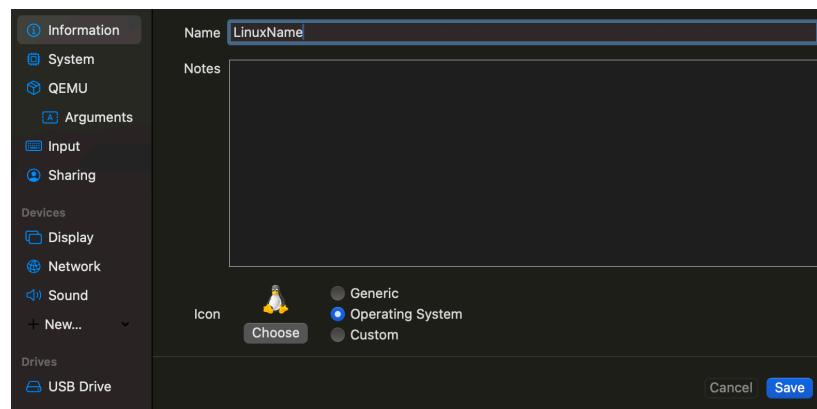
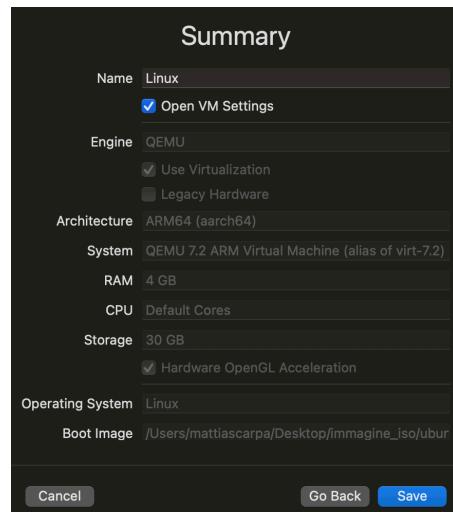
Dobbiamo schiacciare su “Create a New Virtual Machine” e poi scegliere “Virtualize”. Poi ci viene chiesto di scegliere il sistema operativo e noi useremo Linux.

Dalla pagina seguente si inizia a configurare la macchina. Come prima cosa bisogna inserire il path del file ISO scaricato prima. Dopo bisogna inserire : spazio hardware, storage necessario alla macchina (noi mettiamo 30GB), una cartella condivisa tra macchina virtuale e macchina reale (mettiamo la cartella Downloads per esempio) ed infine un summary dove possiamo scegliere il nome e selezionare la voce “Open VM settings”.

Una volta salvato abbiamo finito. L'ultima cosa fondamentale prima di iniziare e far partire la macchina virtuale è quella di togliere l'immagine dalla sezione CD/DVD attraverso il tasto “clear” altrimenti si ripartirebbe con l'inizializzazione di nuovo (dopo aver fatto “reboot now”).

Di seguito i vari passaggi in ordine :





Una volta arrivati qui, possiamo premere sul tasto di start e iniziare ad usare la VM.

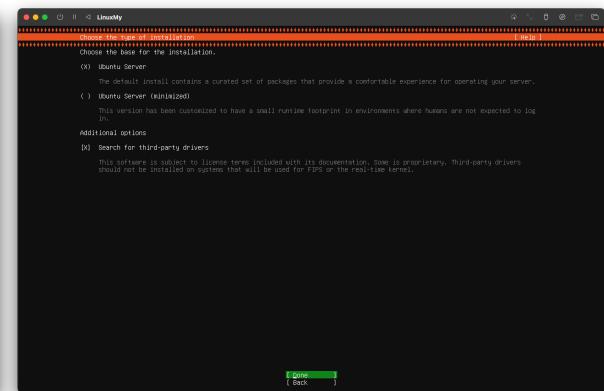
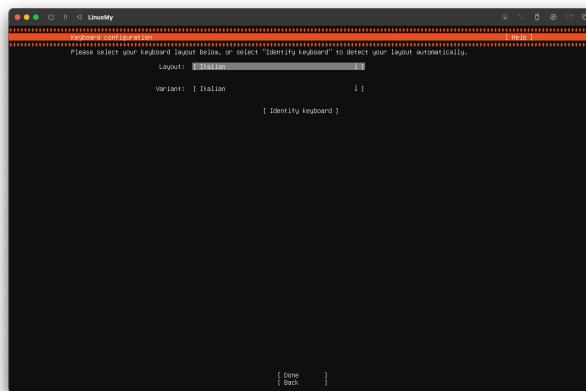
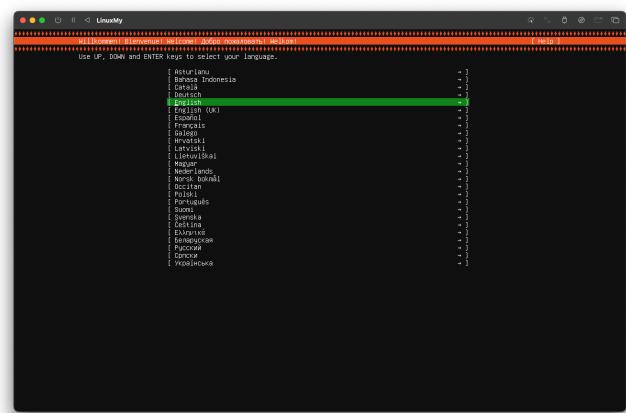
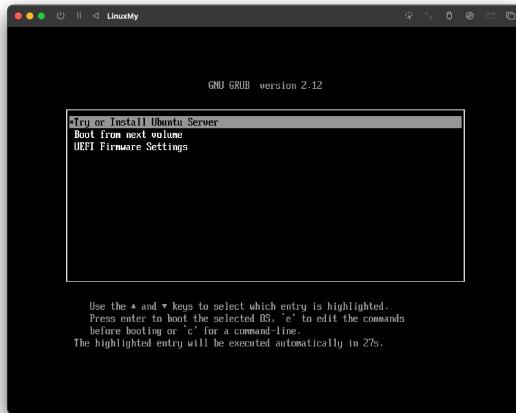
# Configurazione Ubuntu

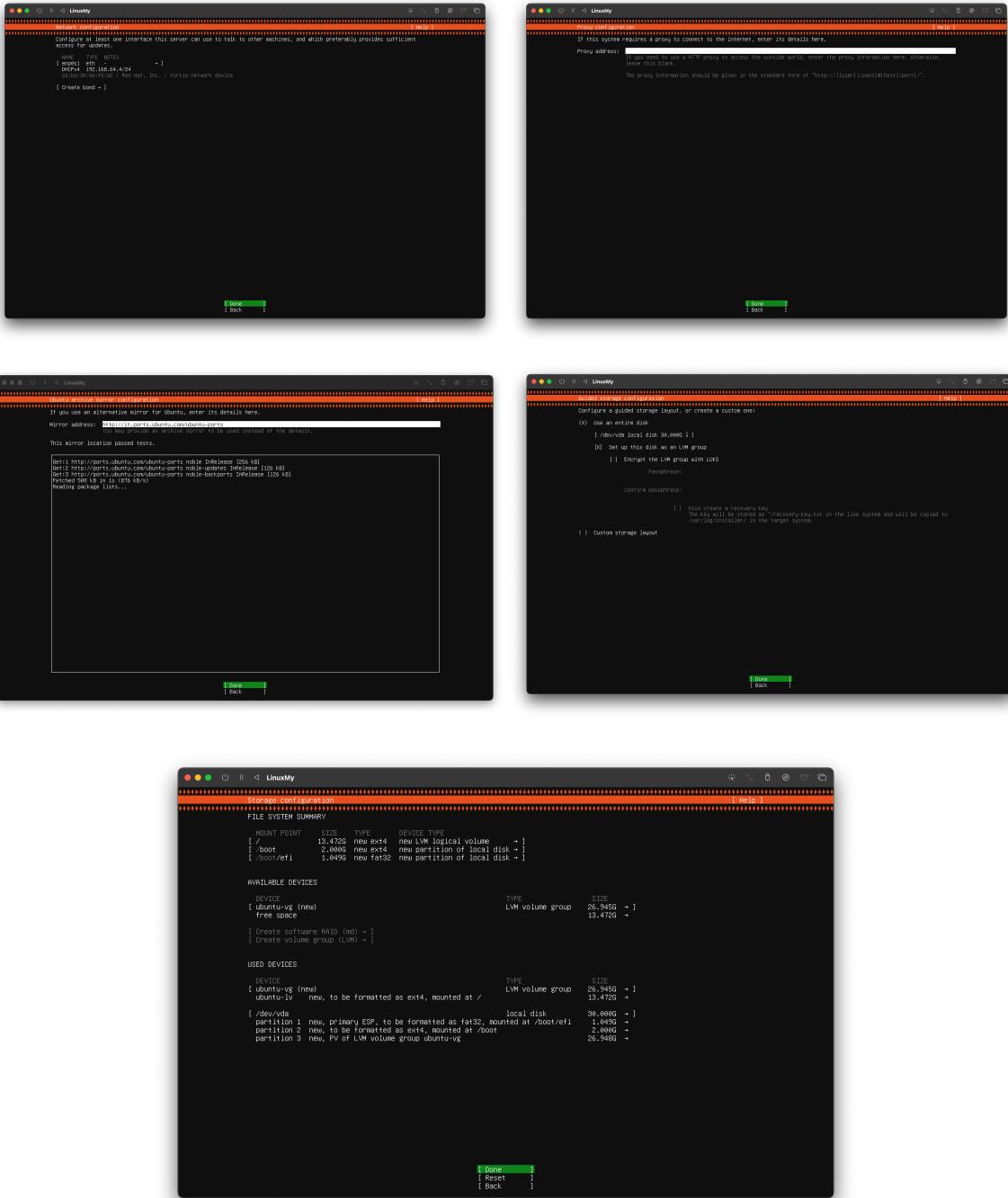
Dopo aver acceso la VM ci verrà chiesto di provare o installare Ubuntu.

Andando avanti dobbiamo selezionare varie cose come : lingua, configurazione della tastiera, tipo di installazione (selezionando anche “search for third-party drivers”), configurazione di rete, configurazione proxy, configurazione del mirro dell’archivio Ubuntu, configurazione guidata dello storage, partizionamento, profilo (nome ecc), la possibilità di avere Ubuntu pro, selezionare l’opzione “Install OpenSSH server”.

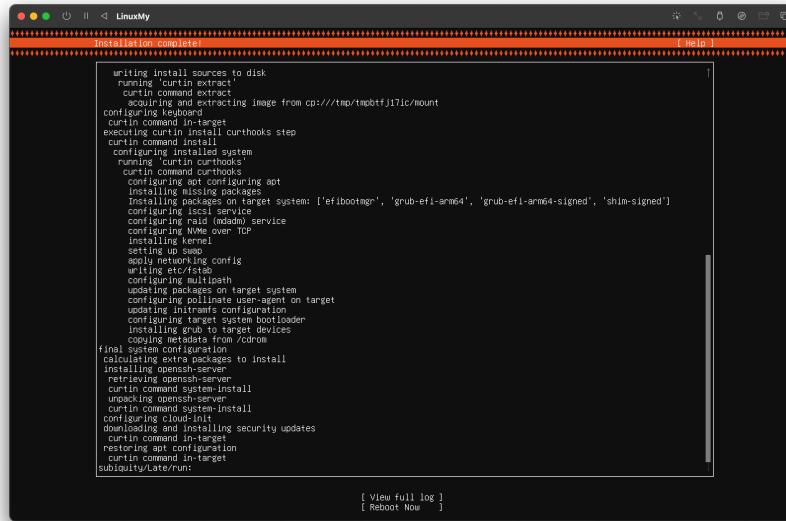
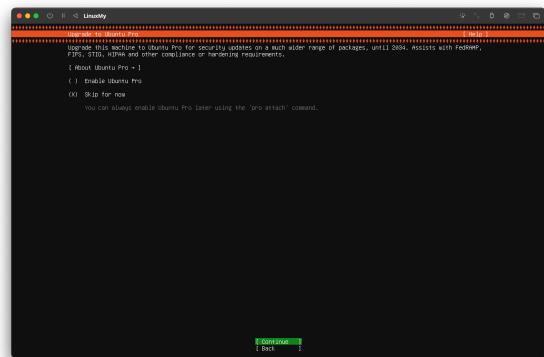
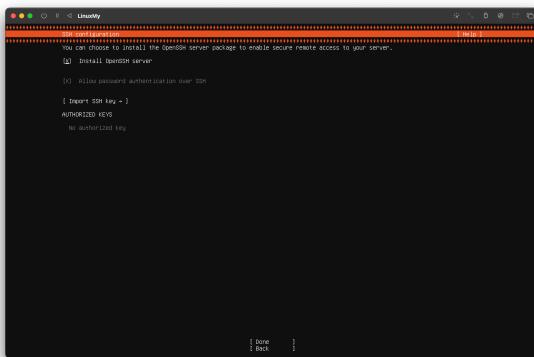
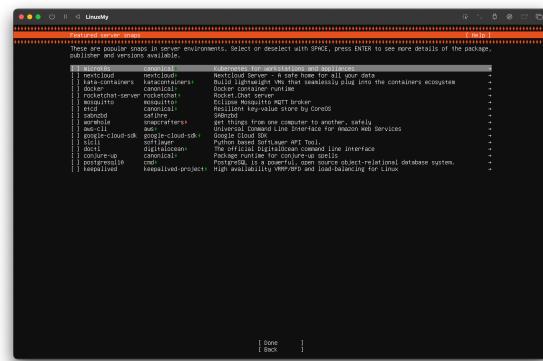
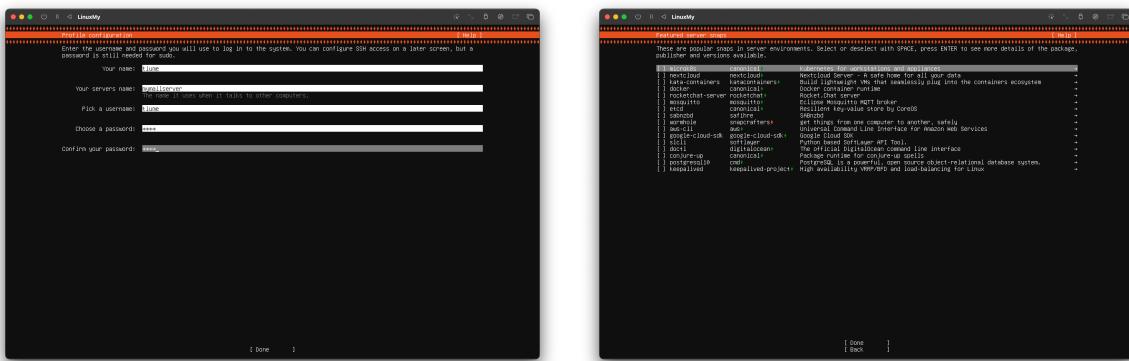
Alla fine dobbiamo arrivare ad una facciata in cui inizia l’installazione di vari pacchetti con la possibilità di visualizzare tutto il log. Una volta finito premiamo su “reboot now” e la macchina si riavvierà e sarà pronta all’uso.

Di seguito i vari passaggi da seguire appena descritti :





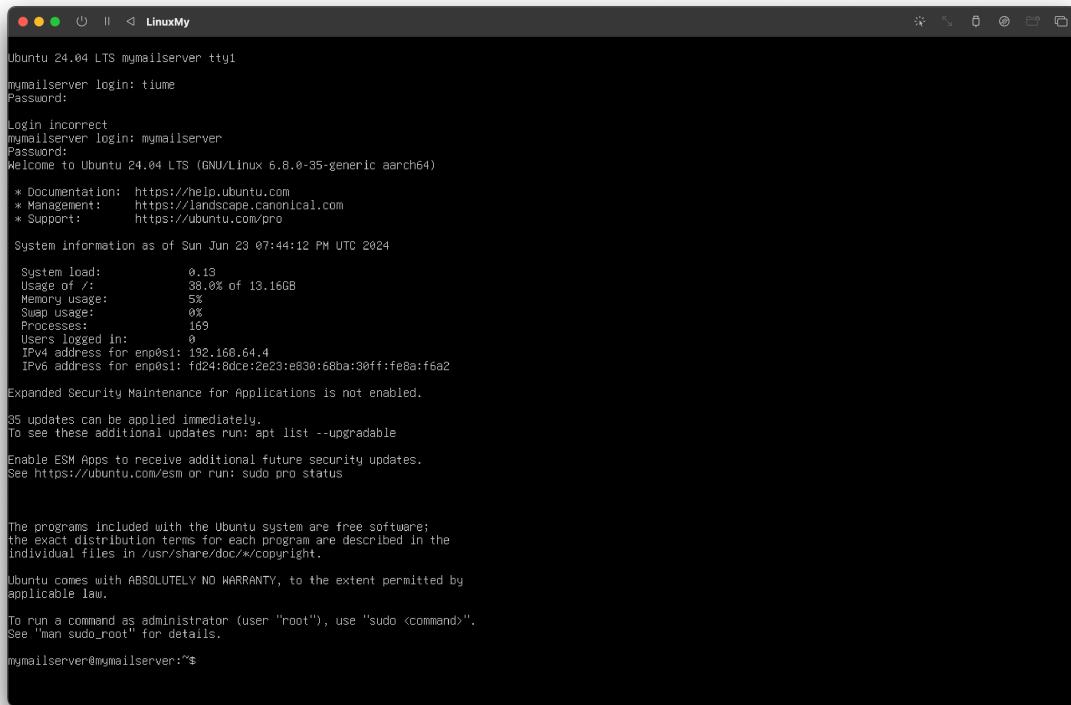
Per l'installazione del server di posta elettronica su Ubuntu, abbiamo effettuato un partizionamento del disco rigido per ottimizzare lo spazio e migliorare la gestione del sistema. In particolare, abbiamo assegnato circa 13GB alla partizione di root (/), che conterrà il sistema operativo e i pacchetti installati, 2GB alla partizione /boot, destinata ai file di avvio del sistema, e circa 1GB alla partizione “/boot/efi”, necessaria per il supporto del firmware UEFI.



Arrivati a questo punto, la VM è pronta all'uso e non resta che fare l'accesso con le credenziali, creare utenti e gruppi, installare Postfix e Mutt ed infine fare i test inviandosi delle mail tra utenti e vedere che tutto funziona correttamente.

# Creazione Utenti e Gruppi

A questo punto, eseguiamo l'accesso utilizzando le credenziali inserite precedentemente :



```
Ubuntu 24.04 LTS mymailserver tty1
mymailserver login: tiume
Password:
Login incorrect
mymailserver login: mymailserver
Password:
Welcome to Ubuntu 24.04 LTS (GNU/Linux 6.8.0-35-generic aarch64)

 * Documentation: https://help.ubuntu.com
 * Management: https://landscape.canonical.com
 * Support: https://ubuntu.com/pro

System information as of Sun Jun 23 07:44:12 PM UTC 2024

System load:      0.13
Usage of /:       38.0% of 13.16GB
Memory usage:    5%
Swap usage:      0%
Processes:       169
Users logged in: 0
IPv4 address for enp0s1: 192.168.64.4
IPv6 address for enp0s1: fd24:8dce:2e23:e830:68ba:30ff:fe8a:f6a2

Expanded Security Maintenance for Applications is not enabled.

35 updates can be applied immediately.
To see these additional updates run: apt list --upgradable

Enable ESM Apps to receive additional future security updates.
See https://ubuntu.com/esm or run: sudo pro status

The programs included with the Ubuntu system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/**/copyright.

Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by
applicable law.

To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

mymailserver@mymailserver:~$
```

Una volta eseguito l'accesso dobbiamo settarci come super-user utilizzando il comando “*sudo -s*” :

```
tiume@mymailserver:~$ ls
tiume@mymailserver:~$ sudo -s
[sudo] password for tiume:
root@mymailserver:/home/tiume# _
```

Ora possiamo cominciare con la creazione di vari utenti. Gli utenti possono essere aggiunti attraverso il comando “*adduser nome\_utente*”, poi dobbiamo dargli i permessi da super-user con il comando “*sudo usermod -aG sudo nome\_utente*”. Le informazioni dettagliate sull'utente sono irrilevanti (numero di telefono, numero di camera ecc).

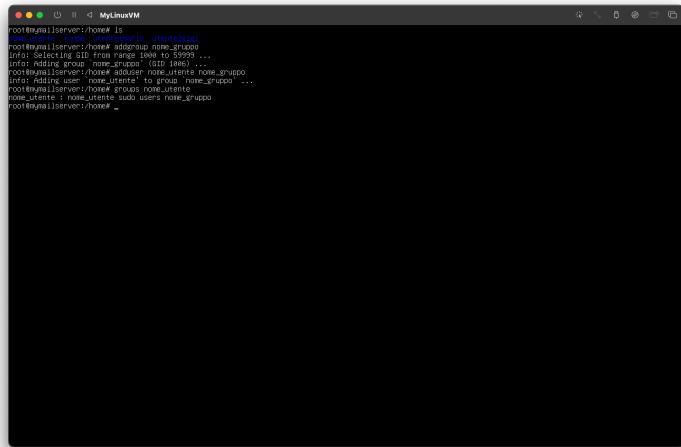
```
root@mymailserver:/home# adduser nome_utente
info: Adding user 'nome_utente' ...
info: Selecting UID/GID from range 1000 to 59999 ...
info: Adding new group 'nome_utente' (1005) ...
info: Adding new user 'nome_utente' (1005) with group `nome_utente (1005)' ...
info: Creating home directory '/home/nome_utente' ...
info: Copying files from '/etc/skel' ...
New password:
Retype new password:
passwd: password updated successfully
Changing the user information for nome_utente
Enter the new value, or press ENTER for the default
    Full Name []: nome_utente
    Room Number []: 0
    Work Phone []: 0
    Home Phone []: 0
    Other []: 0
Is the information correct? [Y/n] Y
Is the information correct? [Y/n] Y
info: Adding new user 'nome_utente' to supplemental / extra groups 'users' ...
info: Adding user 'nome_utente' to group 'users' ...
root@mymailserver:/home# sudo usermod -aG sudo nome_utente
root@mymailserver:/home#
```

Per sapere e vedere gli utenti creati, basta trovarsi nella directory "/home" e utilizzare il comando "ls" :

```
root@mymailserver:/home# ls
nome_utente tiume utenteimario utente@gigi
root@mymailserver:/home#
```

C'è anche la possibilità di poter eliminare un utente attraverso il comando “*userdel -r nome\_utente*”.

Arrivati a questo punto, dobbiamo creare alcuni gruppi (per aggiungere i ruoli) attraverso il comando “*addgroup nome\_gruppo*”. Poi assegniamo tutti gli utenti creati ad un gruppo con il comando “*adduser nome\_utente nome\_gruppo*”:



```
root@MyLinuxServer:/home# id -u nome_utente
root@MyLinuxServer:/home# addgroup nome_gruppo
usermod: Selecting GID from range 1000 to 59999 ...
usermod: Adding user `nome_utente' to group `nome_gruppo'
root@MyLinuxServer:/home# adduser nome_utente nome_gruppo
usermod: Adding user `nome_utente' ...
usermod: Adding user `nome_utente' to group `nome_gruppo'
root@MyLinuxServer:/home# groups nome_utente
nome_utente : nome_utente sudo users nome_gruppo
root@MyLinuxServer:/home#
```

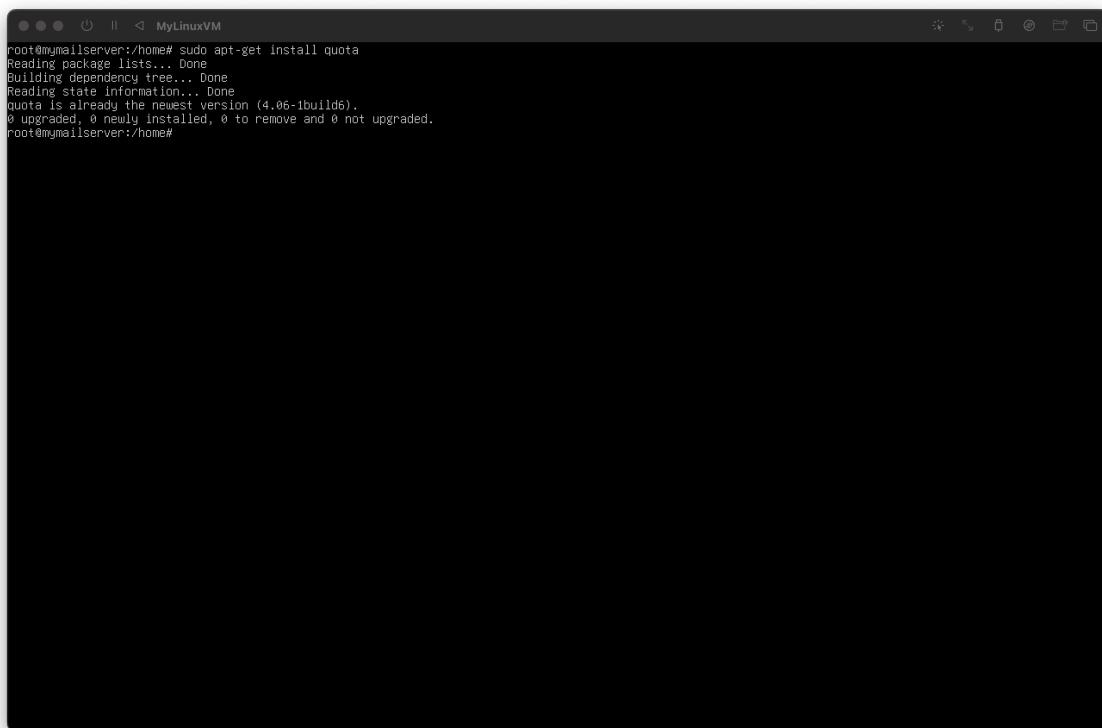
Tramite il comando  
“*groups nome\_utente*”  
abbiamo la possibilità di  
vedere a che gruppi  
appartiene l'utente specificato. Nel nostro caso ci viene detto che l'utente fa parte dei sudo users e del gruppo nome\_gruppo.

La creazione di utenti e la loro assegnazione a gruppi riveste un ruolo fondamentale per diversi motivi. Innanzitutto, garantisce una gestione efficace degli accessi e dei permessi, consentendo a ciascun utente di accedere in modo sicuro alla propria casella di posta elettronica. Inoltre, l'uso dei gruppi facilita la configurazione e la manutenzione del server, permettendo l'applicazione di impostazioni e regole di sicurezza in modo centralizzato e organizzato. Questa pratica migliora la sicurezza complessiva del sistema, riducendo il rischio di compromissione e assicurando un'amministrazione più efficiente delle risorse e delle comunicazioni aziendali.

## Quote

La gestione delle quote su un server è una pratica fondamentale per controllare e limitare l'uso dello spazio su disco da parte degli utenti e dei gruppi. Questo è particolarmente importante in ambienti multiutente, come i server di posta elettronica, dove è essenziale prevenire che un singolo utente o un gruppo possa consumare una quantità eccessiva di risorse di archiviazione, potenzialmente a scapito degli altri utenti.

Iniziamo con il comando che installa il pacchetto “*sudo apt-get install quota*” (la seguente schermata dice che abbiamo già installato i pacchetti in precedenza quindi abbiamo già il necessario per continuare).



```
root@mymailserver:/home# sudo apt-get install quota
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
quota is already the newest version (4.06-1build6).
0 upgraded, 0 newly installed, 0 to remove and 0 not upgraded.
root@mymailserver:/home#
```

Poi, dopo essersi assicurati che tutti i pacchetti sono stati installati, possiamo andare a editare il file “*etc/fstab*” in modo che la partizione di root consideri anche “*usrquota*” e “*grpquota*” (oltre a *defaults*).

Nel nostro caso il filesystem che usiamo (*ext4*) supporta le quote quindi non dovremmo incontrare problemi.

```

root@mymailserver:/home# cat /etc/fstab
# /etc/fstab: static file system information.

# Use 'blkid' to print the universally unique identifier for a
# device; this may be used with UUID= as a more robust way to name devices
# that works even if disks are added and removed. See fstab(5).
#
#     <type>  <options>       <dump>  <pass>
# / was on /dev/ubuntu-vg/ubuntu-1v during curtin installation
/dev/disk/by-uuid/LVM-003ru04emLe7Ldnvi0N3V01A0BnJutfaJHPiQhnM0Sm0Vav4Xqtd0tHu7kq1bSe / ext4 defaults,usrquota,grpquota 0 1
#/boot was on /dev/vda2 during curtin installation
/dev/disk/by-uuid/192482c8-8885-41cb-9823-061b5245bcca /boot ext4 defaults 0 1
#/boot/efi was on /dev/vda1 during curtin installation
/dev/disk/by-uuid/3f8d-9972 /boot/efi vfat defaults 0 1
/swapping none swap sw 0 0
root@mymailserver:/home#

```

Dopo aver editato il file, monto nuovamente “/” (root) attraverso il comando “*sudo mount -o remount /*”, in seguito utilizzo “*mount | grep /*” per controllare che le opzioni inserite nel file “*/etc/fstab*” siano aggiornate.

Utilizzo “*sudo quotacheck -avugm*” e “*sudo quotaon -avug*” per fare altri check sulle quote. Prima di remount: “*sudo systemctl daemon-reload*”.

```

root@mymailserver:/home# mount -o remount /
root@mymailserver:/home# mount | grep /
susts on /sys type sysfs (rw,nosuid,nodev,noexec,relatime)
proc on /proc type proc (rw,nosuid,nodev,noexec,relatime)
udev on /dev type devtmpfs (rw,nosuid,nodev,noexec,relatime,size=1941164k,nr_inodes=495291,mode=755,inode64)
devpts on /dev/pts type devpts (rw,nosuid,nodev,noexec,relatime,gid=5,mode=620,ptmxmode=000)
tmpfs on /run type tmpfs (rw,nosuid,nodev,noexec,relatime,size=39960k,mode=755,inode64)
efivars on /sys/firmware/efi/efivars type efivars (rw,nosuid,nodev,noexec,relatime)
/dev/mapper/ubuntu-vg-ubuntu-1v on / type ext4 (rw,relatime,quota,usrquota,grpquota)
securityfs on /sys/kernel/security type securityfs (rw,nosuid,nodev,noexec,relatime)
tmpfs on /dev/shm type tmpfs (rw,nosuid,nodev,inode64)
tmpfs on /run/lock type tmpfs (rw,nosuid,nodev,noexec,relatime,size=5120k,inode64)
cgroup2 on /sys/fs/cgroup type cgroup2 (rw,nosuid,nodev,noexec,relatime,nsdelegate,memory_recursiveprot)
pstore on /sys/fs/pstore type pstore (rw,nosuid,nodev,noexec,relatime)
bpf on /sys/fs/bpf type bpf (rw,nosuid,nodev,noexec,relatime,mode=700)
sustemp-1 on /proc/sys/fs/binfmt_misc type autofs (rw,relatime,fd=32,prgrp=1,timeout=0,minproto=5,maxproto=5,direct,pipe_ino=8388)
hugepages on /dev/hugepages type hugepages (rw,nosuid,nodev,relatime,pagesize=2M)
mqqueue on /dev/mqueue type mqqueue (rw,nosuid,nodev,noexec,relatime)
debugfs on /sys/kernel/debug type debugfs (rw,nosuid,nodev,noexec,relatime)
tracefs on /sys/kernel/tracing type tracefs (rw,nosuid,nodev,noexec,relatime)
fusectl on /sys/fs/fuse/connections type fusectl (rw,nosuid,nodev,noexec,relatime)
configfs on /sys/kernel/config type configfs (rw,nosuid,nodev,noexec,relatime)
/dev/vda2 on /boot type ext4 (rw,relatime)
/dev/vda1 on /boot/efi type vfat (rw,relatime,fmask=0022,dmask=0022,codepage=437,iocharset=iso8859-1,shortname=mixed,errors=remount-ro)
binfmt_misc on /proc/sys/fs/binfmt_misc type binfmt_misc (rw,nosuid,nodev,noexec,relatime)
tmpfs on /run/user/1000 type tmpfs (rw,nosuid,nodev,relatime,size=399596k, nr_inodes=99899, mode=700, uid=1000, gid=1000, inode64)
root@mymailserver:/home#

```

```

root@mymailserver:/home# sudo quotacheck -avugm
quotacheck: Your kernel probably supports ext4 quota feature but you are using external quota files. Please switch your filesystem to use ext4 quota feature as external quota files on ext4 are deprecated.
quotacheck: quota file /var/lib/quota/1 is mounted at / so quotacheck might damage the file.
Please turn quotas off on use -f to force checking.
root@mymailserver:/home# sudo quotaon -avug
quotaon: Your kernel probably supports ext4 quota feature but you are using external quota files. Please switch your filesystem to use ext4 quota feature as ext4 internal quota files on ext4 are deprecated.
quotaon: using //quota1/user on /dev/mapper/ubuntu--vg-ubuntu--lv [/]: Device or resource busy
root@mymailserver:/home# df -h
Filesystem           Size  Used Avail Mounted on
efivars              393M   39M  354M  /run
efivars              256K  23K  231K  1% /sys/firmware/efi/efivars
/dev/mapper/ubuntu--vg-ubuntu--lv  14G  5.4G  7.2G  43% /dev/mapper/ubuntu--vg-ubuntu--lv [/]
tmpfs                2.0G   0  2.0G  /dev/shm
tmpfs                5.0M   0  5.0M  /dev/lock
tmpfs                2.0G  29M  1.9G  /dev/zero
/dev/vda1             1.1G  1.1G  0     /boot/efi
tmpfs                391M  12K  391M  1% /run/user/1000
root@mymailserver:/home#

```

```

root@mymailserver:/home# tune2fs -l /dev/mapper/ubuntu--vg-ubuntu--lv | grep "Block size"
Block size:          4096

```

Attraverso vari comandi controllo che i partizionamenti siano corretti e adatti alle nostre esigenze. I comandi da utilizzare sono : “*df -h*” e più in particolare “*sudo tune2fs -l /dev/mapper/ubuntu--vg-ubuntu--lv | grep “Block size”*”.

Continuiamo modificando “/” settando le quote per i gruppi attraverso il comando “*sudo setquota -g gruppo1 1800M 2000M 0 0 /*” e stessa cosa per gli altri gruppi (nel nostro caso il gruppo2).

In seguito procediamo con le quote per tutti gli utenti con il comando “*sudo setquota -u utente1mario 350M 400M 0 0 /*”, così per tutti gli utenti

(nel nostro caso utente2gigi). Dopo aver fatto questo, visualizziamo le quote degli utenti nella partizione “/” attraverso il comando “*sudo repquota -s /*”.

```

root@mymailserver:/home# sudo repquota -s /
root@mymailserver:/home# sudo setquota -g gruppo1 1800M 2000M 0 0 /
root@mymailserver:/home# sudo setquota -g gruppo2 1800M 2000M 0 0 /
root@mymailserver:/home# sudo setquota -u utente1mario 350M 400M 0 0 /
root@mymailserver:/home# sudo setquota -u utente2gigi 350M 400M 0 0 /
root@mymailserver:/home# sudo repquota -s /
*** Report for user quotas on device /dev/mapper/ubuntu--vg-ubuntu--1v
Block grace time: 10days; Inode grace time: 10days
User           Space limits                               File limits
              used   soft   hard grace      used   soft   hard grace
-----
root    --  5143M   OK     OK    97124   0   0
man    --  2000K   OK     OK     163   0   0
_apt   --   16K   OK     OK      4   0   0
systemd-network --  16K   OK     OK      4   0   0
systemd-timesync --   4K   OK     OK      2   0   0
messagebus --   4K   OK     OK      1   0   0
pollinate --   4K   OK     OK      2   0   0
syslog  --   512K   OK     OK      5   0   0
uuidd   --   4K   OK     OK      1   0   0
landscape --   8K   OK     OK      3   0   0
ttime   --   24K   OK     OK      9   0   0
utente1mario --  16K   350M  400M      4   0   0
utente2gigi --  16K   350M  400M      4   0   0
nome_utente --   16K   OK     OK      4   0   0

root@mymailserver:/home#

```

Eseguite queste operazioni, settiamo il periodo di tolleranza a 10 ossia 864000 secondi, con il comando “*sudo setquota -t 864000 864000 /*”.

Qualunque utente può vedere la propria quota con il comando “*quota -s*”. Per cambiare utente basta digitare “*su - nome\_utente*”.

```

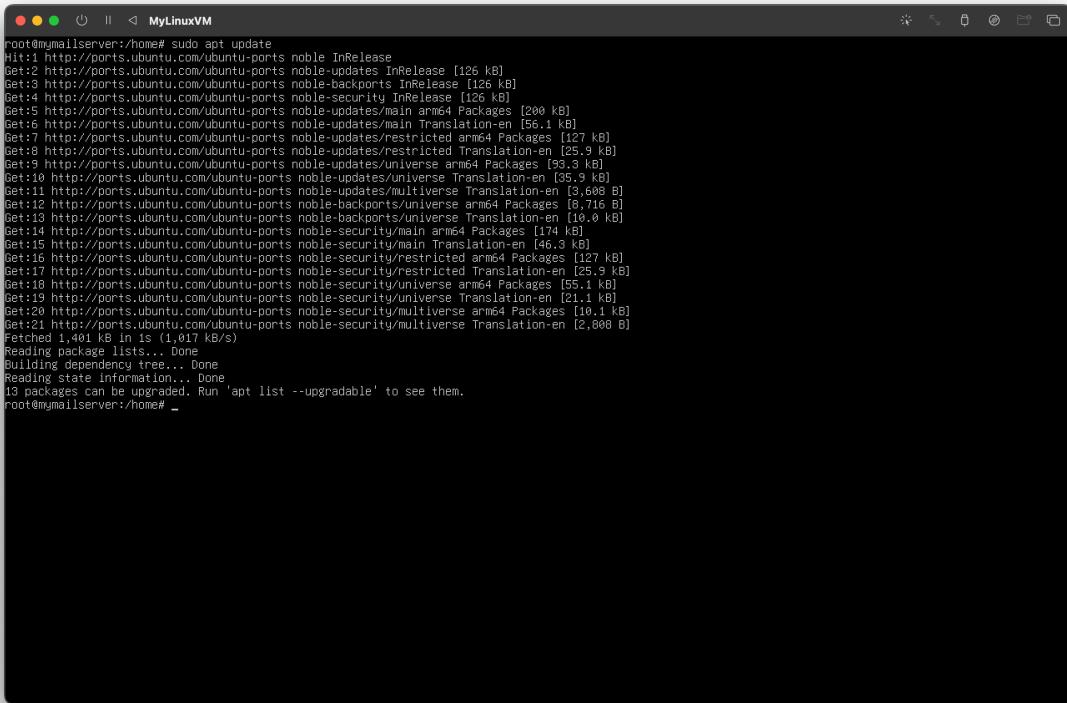
root@mymailserver:/home# sudo setquota -t 864000 864000 /
root@mymailserver:/home# quota -s
Disk quotas for user root (uid 0): none
root@mymailserver:/home# quota su utente1mario
Total disk space available: 1800M
Total inodes available: 2000000
root@mymailserver:/home# su - utente1mario
utente1mario@mymailserver:~$ ls
utente1mario@mymailserver:~$ quota -s
Disk quotas for user utente1mario (uid 1001):
Filesystem      limit   grace   files   quota   limit   grace
/dev/mapper/ubuntu--vg-ubuntu--1v
                   16K   350M    400M      4     0     0
utente1mario@mymailserver:~$ 

```

# Postfix (MTA)

Postfix ([link alla documentazione](#)) è un software open-source per la gestione della posta elettronica, noto come agente di trasferimento di posta (MTA, Mail Transfer Agent). Creato da Wietse Venema, Postfix è ampiamente utilizzato per instradare, inviare e ricevere email su server Unix-like, inclusi sistemi Linux. La sua architettura modulare e la reputazione per la facilità di configurazione, sicurezza e prestazioni lo rendono una scelta popolare tra gli amministratori di sistema per la gestione efficiente e affidabile della posta elettronica.

La prima cosa da fare è controllare che la nostra VM sia aggiornata con il comando “*sudo apt update*” e poi fare l’upgrade con “*sudo apt upgrade*”.



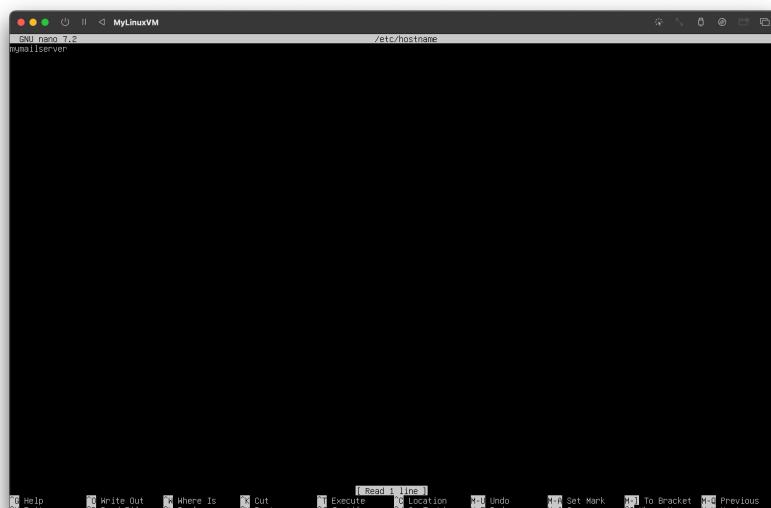
```
root@mymailserver:/home# sudo apt update
Hit:1 http://ports.ubuntu.com/ubuntu-ports noble InRelease
Get:2 http://ports.ubuntu.com/ubuntu-ports noble-updates InRelease [126 kB]
Get:3 http://ports.ubuntu.com/ubuntu-ports noble-backports InRelease [126 kB]
Get:4 http://ports.ubuntu.com/ubuntu-ports noble-security InRelease [126 kB]
Get:5 http://ports.ubuntu.com/ubuntu-ports noble-updates/main arm64 Packages [200 kB]
Get:6 http://ports.ubuntu.com/ubuntu-ports noble-updates/main Translation-en [56,1 kB]
Get:7 http://ports.ubuntu.com/ubuntu-ports noble-updates/restricted arm64 Packages [127 kB]
Get:8 http://ports.ubuntu.com/ubuntu-ports noble-updates/restricted Translation-en [25,9 kB]
Get:9 http://ports.ubuntu.com/ubuntu-ports noble-updates/universe arm64 Packages [93,9 kB]
Get:10 http://ports.ubuntu.com/ubuntu-ports noble-updates/universe Translation-en [35,9 kB]
Get:11 http://ports.ubuntu.com/ubuntu-ports noble-updates/universe Translation-en [8,698 kB]
Get:12 http://ports.ubuntu.com/ubuntu-ports noble-updates/universe arm64 Packages [8,716 kB]
Get:13 http://ports.ubuntu.com/ubuntu-ports noble-backports/universe Translation-en [19,0 kB]
Get:14 http://ports.ubuntu.com/ubuntu-ports noble-security/main arm64 Packages [174 kB]
Get:15 http://ports.ubuntu.com/ubuntu-ports noble-security/restricted arm64 Packages [46,3 kB]
Get:16 http://ports.ubuntu.com/ubuntu-ports noble-security/restricted Translation-en [127 kB]
Get:17 http://ports.ubuntu.com/ubuntu-ports noble-security/restricted Translation-en [25,9 kB]
Get:18 http://ports.ubuntu.com/ubuntu-ports noble-security/universe arm64 Packages [55,1 kB]
Get:19 http://ports.ubuntu.com/ubuntu-ports noble-security/universe Translation-en [21,1 kB]
Get:20 http://ports.ubuntu.com/ubuntu-ports noble-security/multiverse arm64 Packages [10,1 kB]
Get:21 http://ports.ubuntu.com/ubuntu-ports noble-security/multiverse Translation-en [2,000 kB]
Fetched 1,401 kB in 1s (1,017 kB/s)
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
13 packages can be upgraded. Run 'apt list --upgradable' to see them.
root@mymailserver:/home# _
```

```

linux-tools-6.8.0-35 linux-tools-6.8.0-36-generic
The following packages will be upgraded:
  dracut-install libnetplan1 linux-generic linux-headers-generic linux-image-generic linux-libc-dev linux-tools-common netplan-generator netplan.io
  python3-distupgrade python3-netplan ubuntu-release-upgrader-core wget
  10 upgraded, 7 newly installed, 0 to remove and 0 not upgraded.
  10 status information for packages
  Need to get 249 MB of archives.
  After this operation, 345 MB of additional disk space will be used.
Do you want to continue? [Y/n] Y
Get:1 http://ports.ubuntu.com/ubuntu-ports noble-updates/main arm64 python3-netplan arm64 1.0~ubuntui.2 [21.5 kB]
Get:2 http://ports.ubuntu.com/ubuntu-ports noble-updates/main arm64 netplan-generator arm64 1.0~ubuntui.2 [59.2 kB]
Get:3 http://ports.ubuntu.com/ubuntu-ports noble-updates/main arm64 libnetplan1 arm64 1.0~ubuntui.2 [155 kB]
Get:4 http://ports.ubuntu.com/ubuntu-ports noble-updates/main arm64 libnetplan1 arm64 1.0~ubuntui.2 [121 kB]
Get:5 http://ports.ubuntu.com/ubuntu-ports noble-updates/main arm64 ubuntu-release-upgrader-core all 1:24.04.19 [27.3 kB]
Get:6 http://ports.ubuntu.com/ubuntu-ports noble-updates/main arm64 python3-distupgrade all 1:24.04.19 [122 kB]
Get:7 http://ports.ubuntu.com/ubuntu-ports noble-updates/main arm64 wget arm64 1.21.4~ubuntu4.1 [330 kB]
Get:8 http://ports.ubuntu.com/ubuntu-ports noble-updates/main arm64 dracut-install arm64 0.86+5~ubuntui.3 [31.4 kB]
Get:9 http://ports.ubuntu.com/ubuntu-ports noble-updates/main arm64 linux-image-6.8.0-36-generic arm64 6.8.0-36.36 [17.9 MB]
Get:10 http://ports.ubuntu.com/ubuntu-ports noble-updates/main arm64 linux-image-6.8.0-36-generic arm64 6.8.0-36.36 [17.9 MB]
Get:11 http://ports.ubuntu.com/ubuntu-ports noble-updates/main arm64 linux-headers-extra-6.8.0-36-generic arm64 6.8.0-36.36 [121 kB]
Get:12 http://ports.ubuntu.com/ubuntu-ports noble-updates/main arm64 linux-generic arm64 6.8.0-36.36 [1,732 B]
Get:13 http://ports.ubuntu.com/ubuntu-ports noble-updates/main arm64 linux-image-generic arm64 6.8.0-36.36 [10.2 kB]
Get:14 http://ports.ubuntu.com/ubuntu-ports noble-updates/main arm64 linux-headers-generic arm64 6.8.0-36.36 [113.6 kB]
Get:15 http://ports.ubuntu.com/ubuntu-ports noble-updates/main arm64 linux-headers-generic arm64 6.8.0-36.36 [113.6 kB]
Get:16 http://ports.ubuntu.com/ubuntu-ports noble-updates/main arm64 linux-headers-generic arm64 6.8.0-36.36 [3,260 kB]
Get:17 http://ports.ubuntu.com/ubuntu-ports noble-updates/main arm64 linux-libc-dev arm64 6.8.0-36.36 [1,690 kB]
Get:18 http://ports.ubuntu.com/ubuntu-ports noble-updates/main arm64 linux-tools-common all 6.8.0-36.36 [468 kB]
Get:19 http://ports.ubuntu.com/ubuntu-ports noble-updates/main arm64 linux-tools-6.8.0-36 arm64 6.8.0-36.36 [3,619 kB]
Get:20 http://ports.ubuntu.com/ubuntu-ports noble-updates/main arm64 linux-tools-6.8.0-36-generic arm64 6.8.0-36.36 [1,732 B]
Fetched 249 MB in 55s (45.5 MB/s)
(Reading database ... 39968 files and directories currently installed.)
Preparing to unpack .../0~python3-netplan_1.0~ubuntui.2_arm64.deb ...
Unpacking python3-netplan (1.0~ubuntui.2) over (1.0~ubuntui) ...
Preparing to unpack .../0~netplan-generator_1.0~ubuntui.2_arm64.deb ...
Preparing to unpack .../lib/systemd/systemgenerators/netplan.usr-is-merged by netplan-generator'
Unpacking netplan.io (1.0~ubuntui.2) over (1.0~ubuntui) ...
Preparing to unpack .../02-netplan_1.0~ubuntui.2_arm64.deb ...
Unpacking netplan.io (1.0~ubuntui.2) over (1.0~ubuntui) ...
Preparing to unpack .../03-libnetplan1_1.0~ubuntui.2_arm64.deb ...
Unpacking libnetplan1:arm64 (1.0~ubuntui.2) over (1.0~ubuntui) ...
Preparing to unpack .../04-ubuntu-release-upgrader-core_1:24.04.19_all.deb ...
Unpacking ubuntu-release-upgrader-core (1:24.04.19) over (1:24.04.18) ...
Preparing to unpack .../05-python3-distupgrade_1:24.04.19_all.deb ...
Unpacking python3-distupgrade (1:24.04.19) over (1:24.04.18) ...
Preparing to unpack .../06-wget_1.21.4~ubuntu4.1 ...
Unpacking wget (1.21.4~ubuntu4.1) over (1.21.4~ubuntu4) ...
Preparing to unpack .../07-dracut-install_0.86+5~ubuntui.3 ...
Unpacking dracut-install (0.86+5~ubuntui.3) over (0.86+5~ubuntui) ...
Progress: [ 20%] [#####
.
.
```

Poi vado a controllare e se servisse a editare il nome dell'host (hostname) nel file "/etc/hostname".

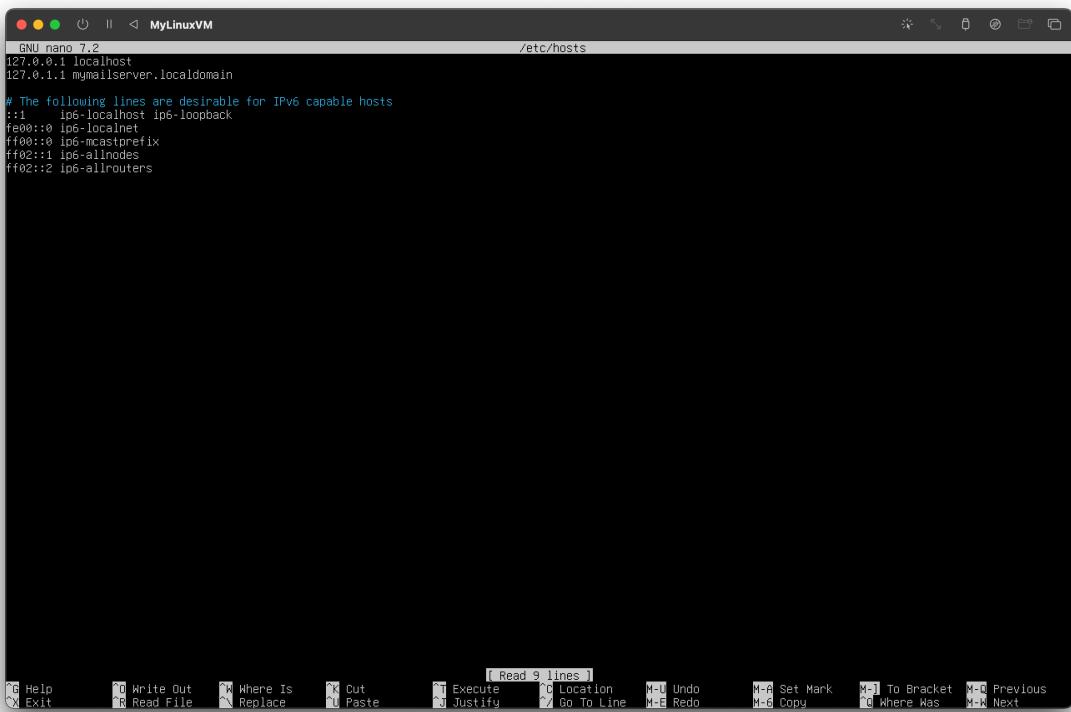
In caso aggiorniamo il file "/etc/hostname" per cambiare l'hostname del server, garantendo che il Fully Qualified Domain Name (FQDN) sia coerente con la funzione del nostro server di posta elettronica. Questo passaggio è cruciale per l'identificazione e il corretto funzionamento dei servizi di posta. Per fare ciò, abbiamo aperto il file "/etc/hostname" e sostituito l'attuale hostname con "mymailserver". Questo cambiamento assicura che il nome del server rifletta chiaramente il suo ruolo specifico all'interno della nostra rete.



Per configurare il dominio locale, modifichiamo il file “/etc/hosts” per includere una voce per il nostro server di posta elettronica. In particolare, assegniamo il dominio locale all’indirizzo IP 127.0.1.1. Questo permette di risolvere il nome del server all’interno della rete locale senza dipendere da un DNS esterno.

Aggiungiamo la seguente riga al file “/etc/hosts”: “127.0.1.1 mymailserver.localdomain mymailserver”.

In questo modo, utilizziamo l’estensione .localdomain per garantire che il nome del server (mymailserver) sia riconosciuto correttamente nel contesto locale, facilitando la gestione e la risoluzione dei nomi all’interno della nostra rete. Questo approccio è utile per test e configurazioni locali senza necessità di configurare un dominio DNS pubblico.



```
GNU nano 7.2                               /etc/hosts
127.0.0.1 localhost
127.0.1.1 mymailserver.localdomain

# The following lines are desirable for IPv6 capable hosts
::1      ip6-localhost ip6-loopback
fe00::0 ip6-localnet
ff00::0 ip6-mcastprefix
ff02::1 ip6-allnodes
ff02::2 ip6-allrouters
```

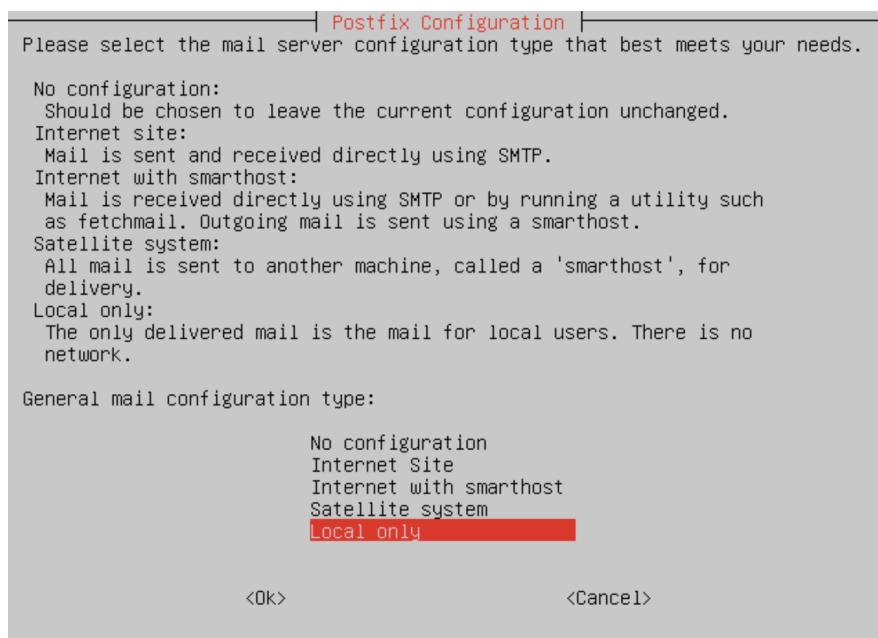
Poi per provare che tutto funziona inseriamo ed inviamo il comando “ping mymailserver.localdomain”, in questo modo potremo controllare che la connettività tra la VM e l’indirizzo 127.0.1.1 funzioni nella maniera corretta.

```

root@mymailserver:/home# ping mymailserver.localdomain
PING mymailserver.localdomain (127.0.1.1) 56(84) bytes of data.
64 bytes from mymailserver.localdomain (127.0.1.1): icmp_seq=1 ttl=64 time=0.107 ms
64 bytes from mymailserver.localdomain (127.0.1.1): icmp_seq=2 ttl=64 time=0.134 ms
64 bytes from mymailserver.localdomain (127.0.1.1): icmp_seq=3 ttl=64 time=0.048 ms
64 bytes from mymailserver.localdomain (127.0.1.1): icmp_seq=4 ttl=64 time=0.235 ms
64 bytes from mymailserver.localdomain (127.0.1.1): icmp_seq=5 ttl=64 time=0.303 ms
64 bytes from mymailserver.localdomain (127.0.1.1): icmp_seq=6 ttl=64 time=0.139 ms
64 bytes from mymailserver.localdomain (127.0.1.1): icmp_seq=7 ttl=64 time=0.114 ms
64 bytes from mymailserver.localdomain (127.0.1.1): icmp_seq=8 ttl=64 time=0.141 ms
64 bytes from mymailserver.localdomain (127.0.1.1): icmp_seq=9 ttl=64 time=0.140 ms
64 bytes from mymailserver.localdomain (127.0.1.1): icmp_seq=10 ttl=64 time=0.147 ms
64 bytes from mymailserver.localdomain (127.0.1.1): icmp_seq=11 ttl=64 time=0.124 ms
64 bytes from mymailserver.localdomain (127.0.1.1): icmp_seq=12 ttl=64 time=0.128 ms
64 bytes from mymailserver.localdomain (127.0.1.1): icmp_seq=13 ttl=64 time=0.108 ms
64 bytes from mymailserver.localdomain (127.0.1.1): icmp_seq=14 ttl=64 time=0.125 ms
64 bytes from mymailserver.localdomain (127.0.1.1): icmp_seq=15 ttl=64 time=0.076 ms
64 bytes from mymailserver.localdomain (127.0.1.1): icmp_seq=16 ttl=64 time=0.049 ms
64 bytes from mymailserver.localdomain (127.0.1.1): icmp_seq=17 ttl=64 time=0.070 ms
64 bytes from mymailserver.localdomain (127.0.1.1): icmp_seq=18 ttl=64 time=0.127 ms
64 bytes from mymailserver.localdomain (127.0.1.1): icmp_seq=19 ttl=64 time=0.113 ms
64 bytes from mymailserver.localdomain (127.0.1.1): icmp_seq=20 ttl=64 time=0.141 ms
64 bytes from mymailserver.localdomain (127.0.1.1): icmp_seq=21 ttl=64 time=0.364 ms
64 bytes from mymailserver.localdomain (127.0.1.1): icmp_seq=22 ttl=64 time=0.149 ms
64 bytes from mymailserver.localdomain (127.0.1.1): icmp_seq=23 ttl=64 time=0.132 ms
64 bytes from mymailserver.localdomain (127.0.1.1): icmp_seq=24 ttl=64 time=0.115 ms
64 bytes from mymailserver.localdomain (127.0.1.1): icmp_seq=25 ttl=64 time=0.065 ms
64 bytes from mymailserver.localdomain (127.0.1.1): icmp_seq=26 ttl=64 time=0.142 ms
64 bytes from mymailserver.localdomain (127.0.1.1): icmp_seq=27 ttl=64 time=0.058 ms
64 bytes from mymailserver.localdomain (127.0.1.1): icmp_seq=28 ttl=64 time=0.049 ms
64 bytes from mymailserver.localdomain (127.0.1.1): icmp_seq=29 ttl=64 time=0.042 ms
c
-- mymailserver.localdomain ping statistics --
29 packets transmitted, 0% packet loss, time 2066ms
rtt min/avg/max/mdev = 0.042/0.120/0.364/0.070 ms
root@mymailserver:/home#

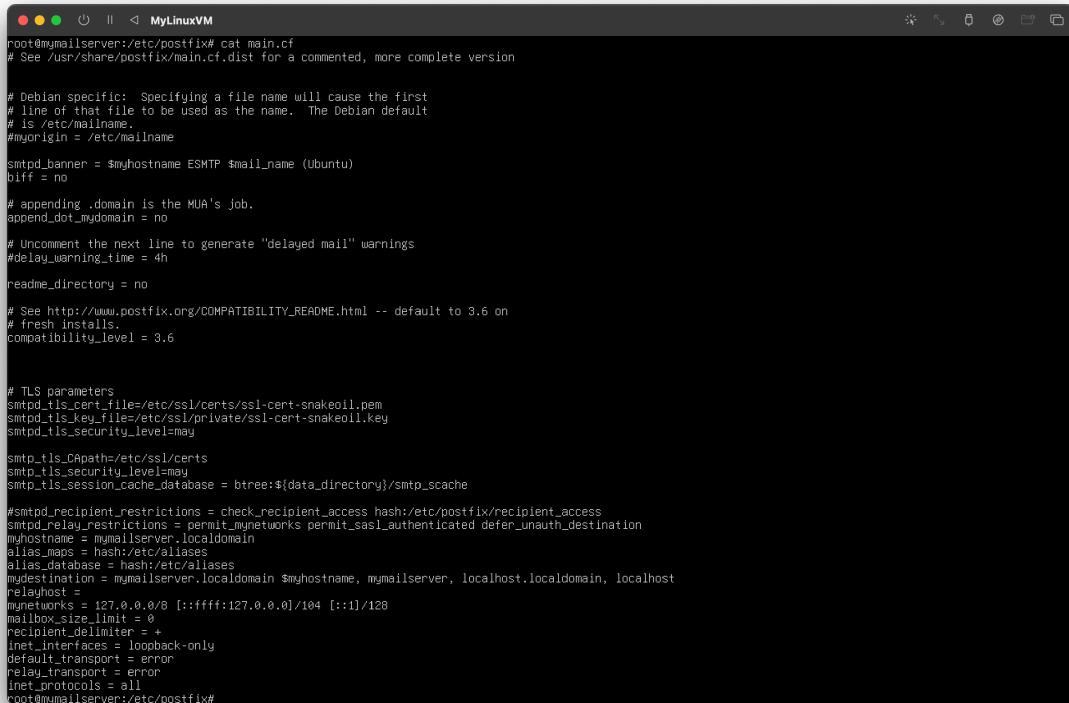
```

In seguito dobbiamo installare Postfix tramite la riga di comando “*sudo apt-get install postfix*”.



Dopo l'installazione dei pacchetti, viene aperta la pagina per la configurazione come mostrato qui sopra e noi selezioneremo “Local only”.

In seguito andiamo ad editare il file “/etc/postfix/main.cf” in modo tale che la riga con “myhostname” sia associata al localhost 127.0.1.1 ossia mymailserver.localdomain e la riga “mydestination” sempre con i nomi corretti di mymailserver :



```
root@mymailserver:/etc/postfix# cat main.cf
# See /usr/share/postfix/main.cf.dist for a commented, more complete version

# Debian specific: Specifying a file name will cause the first
# line of that file to be used as the name. The Debian default
# is /etc/mailname.
#myorigin = /etc/mailname

smtpd_banner = $myhostname ESMTP $mail_name (Ubuntu)
biff = no

# appending .domain is the MUA's job.
append_dot_mydomain = no

# Uncomment the next line to generate "delayed mail" warnings
#delay_warning_time = 4h
readme_directory = no

# See http://www.postfix.org/COMPATIBILITY_README.html -- default to 3.6 on
# fresh installs.
compatibility_level = 3.6

# TLS parameters
smtpd_tls_cert_file=/etc/ssl/certs/ssl-cert-snakeoil.pem
smtpd_tls_key_file=/etc/ssl/private/ssl-cert-snakeoil.key
smtpd_tls_security_level=may
smtpd_tls_ciphers=CALLBACK
smtpd_tls_security_level=may
smtpd_tls_session_cache_database = btree:${data_directory}/smtp_scache

#smtpd_recipient_restrictions = check_recipient_access hash:/etc/postfix/recipient_access
#smtpd_relay_restrictions = permit_mynetworks permit_sasl_authenticated defer_unauth_destination
myhostname = mymailserver.localdomain
alias_maps = hash:/etc/aliases
alias_database = hash:/etc/aliases
mydestination = mymailserver.localdomain $myhostname, mymailserver, localhost.localdomain, localhost
relay_domains =
mynetworks = 127.0.0.0/8 [::ffff:127.0.0.0]/104 [::1]/128
mailbox_size_limit = 0
recipient_delimiter = +
inet_interfaces = loopback-only
default_transport = error
relay_transport = error
inet_protocols = all
root@mymailserver:/etc/postfix#
```

Arrivati a questo punto, riavviamo postfix in modo che i cambiamenti che abbiamo apportato si salvino con il comando “*sudo systemctl restart postfix*”.

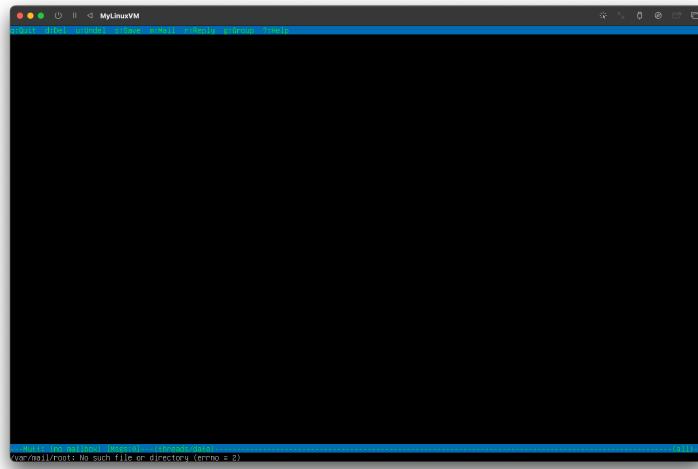
Dopodiché installiamo mutt attraverso il comando “*sudo apt install mutt*” e attendiamo che i pacchetti vengano scaricati.

Mutt è un client di posta elettronica basato su terminale per sistemi Unix-like. È noto per la sua flessibilità, potenza e capacità di personalizzazione. Sebbene sia un’applicazione testuale, offre una vasta gamma di funzionalità che lo rendono una scelta popolare tra gli utenti avanzati e gli amministratori di sistema che preferiscono gestire la posta elettronica direttamente dalla linea di comando.

Dopo aver modificato main.cf usare il comando “*systemctl reload postfix*”.

Per aprire il suo menu/pagina principale, è necessario semplicemente digitare “mutt” e premere invio (ovviamente dovremo trovarci all’interno del profilo dell’utente con cui vogliamo accedere alla posta).

Si aprirà una facciata apparentemente vuota da cui possiamo uscire digitando “q” :



In questa facciata verranno visualizzate la mail ricevute da altri utenti. Se è la prima volta che utilizziamo mutt con un profilo ci verrà chiesto di creare una directory Mail all’interno della “/home/nome\_utente/Mail”.

Ora, dentro al profilo principale (nel mio caso root@mymailserver), dovrò andare in “/var/mail” e creare tutti i file per ogni utente dove verranno inseriti alcuni dati (come per esempio un file chiamato “sent” con tutte le mail inviate).

```
root@mymailserver:/etc/postfix# cd ..
root@mymailserver:/etc# cd ..
root@mymailserver:~# cd ..
root@mymailserver:~/var# ls
backups cache crash lib local lock log mail opt run snap spool tmp
root@mymailserver:~/var# cd mail
root@mymailserver:~/var/mail# ls
nome_utente1 utente1mario utente2 utente2gigi
root@mymailserver:~/var/mail# touch nome_utente2
root@mymailserver:~/var/mail# ls
nome_utente1 utente1mario utente2 utente2gigi
root@mymailserver:~/var/mail# ..
```

## Test Finali

### (invio di mail e check ricezione)

Siamo arrivati quasi alla fine. Ora è il momento di provare a testare il mail di posta inviando per esempio qualche mail.

Posizioniamoci nel profilo che vogliamo usare per inviare la mail e apriamo mutt digitando il comando “mutt”. Poi, premiamo il tasto “m” per iniziare ad inviare la mail e ci verrà chiesto di : inserire il destinatario (indirizzo composto da “nome\_utente@mymailserver.localedomain” dove mymailserver è il nostro FQDN, quindi nel nostro caso potrebbe essere per esempio “utente2gigi@mymailserver.localedomain”).

Dopo aver inserito l’indirizzo mail del destinatario, ci viene chiesto di inserire l’oggetto della mail (esempio Test1), poi dovremo inserire il testo da inviare (esempio “primo test da mario a gigi”) e premere ^o per salvare e ^x per uscire.

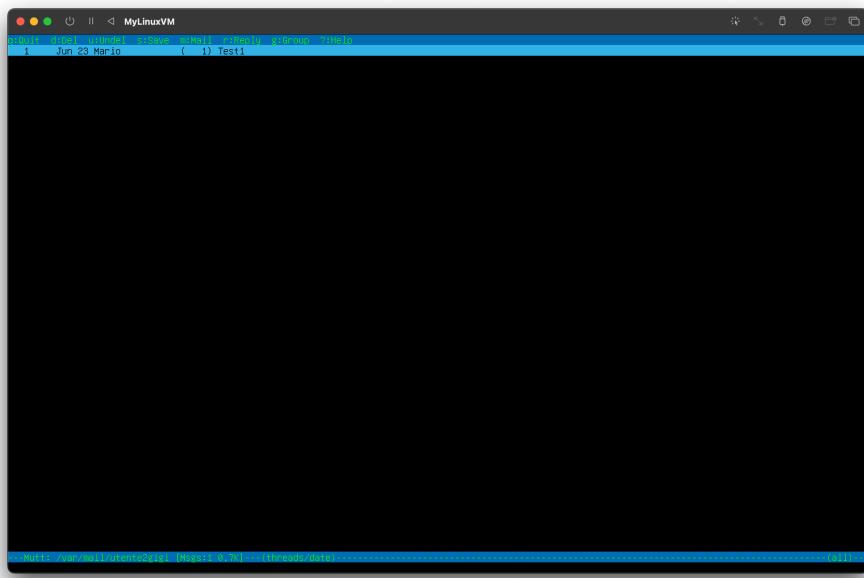
Arrivati a questo punto non resta che confermare il riepilogo della mail premendo “y” ed inviarla.

Per poter visualizzare il messaggio ricevuto dobbiamo posizionarci nel profilo del destinatario (utente2gigi nel nostro caso) e aprire mutt. Una volta aperto, verranno visualizzate le mail ricevute (da utente1mario nel nostro caso).

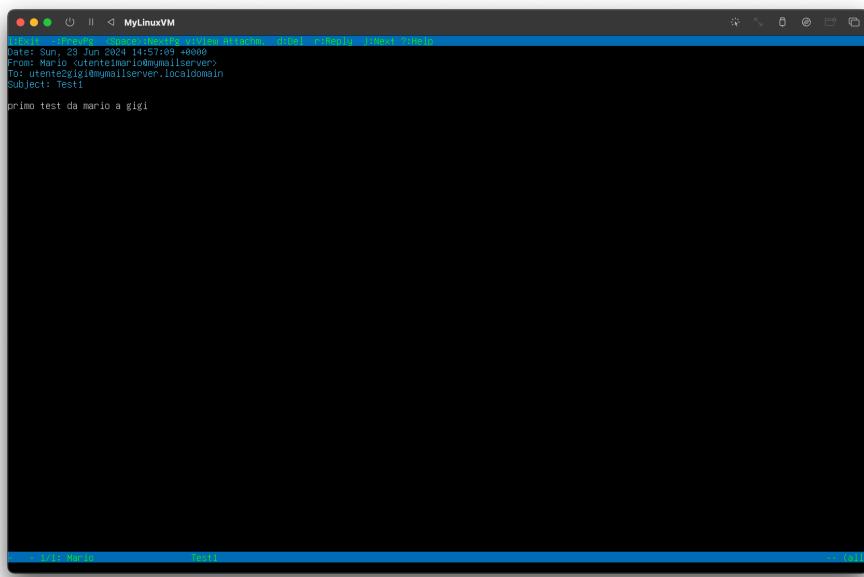
Per inviarne una come risposta (si può anche fare il reply) basta seguire gli stessi passaggi di prima e, entrando nel profilo di utente1mario, potremo vedere la risposta che ci ha inviato utente2gigi.

Ogni mail che inviamo verrà salvata nel file “sent” posizionato in :  
“/home/nome\_utente/sent”

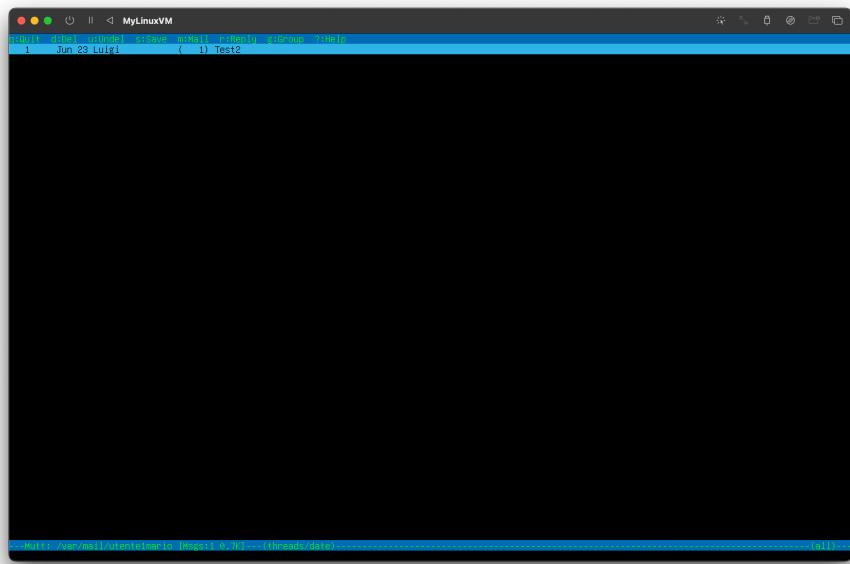
Di seguito, vediamo come sono andati i test :



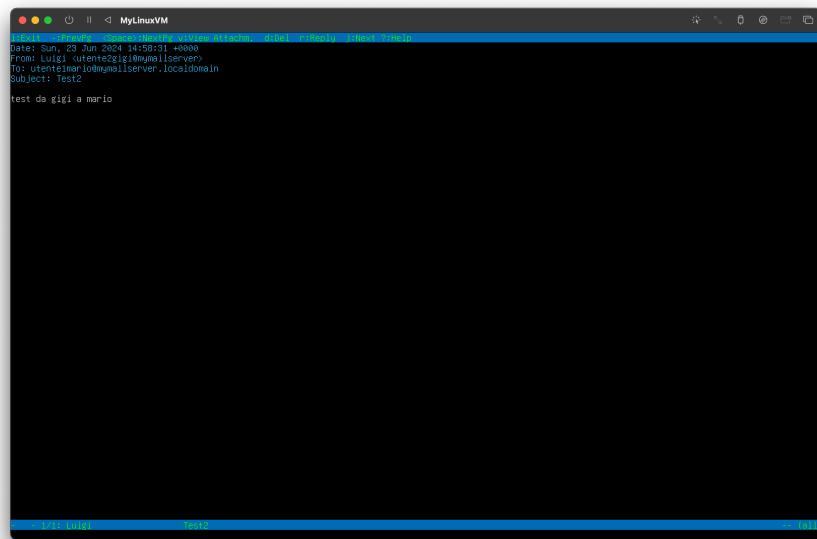
-> posta elettronica di utente2gigi : messaggio ricevuto da Mario (utente1mario).



-> posizioniamoci con il cursore (con le frecce) sulla mail appena ricevuta e premiamo invio per visualizzarla. Come possiamo notare, verranno visualizzati tutti i dettagli sulla mail compreso il messaggio inviato. Quindi in questo verso (da mario a gigi) funziona tutto correttamente.



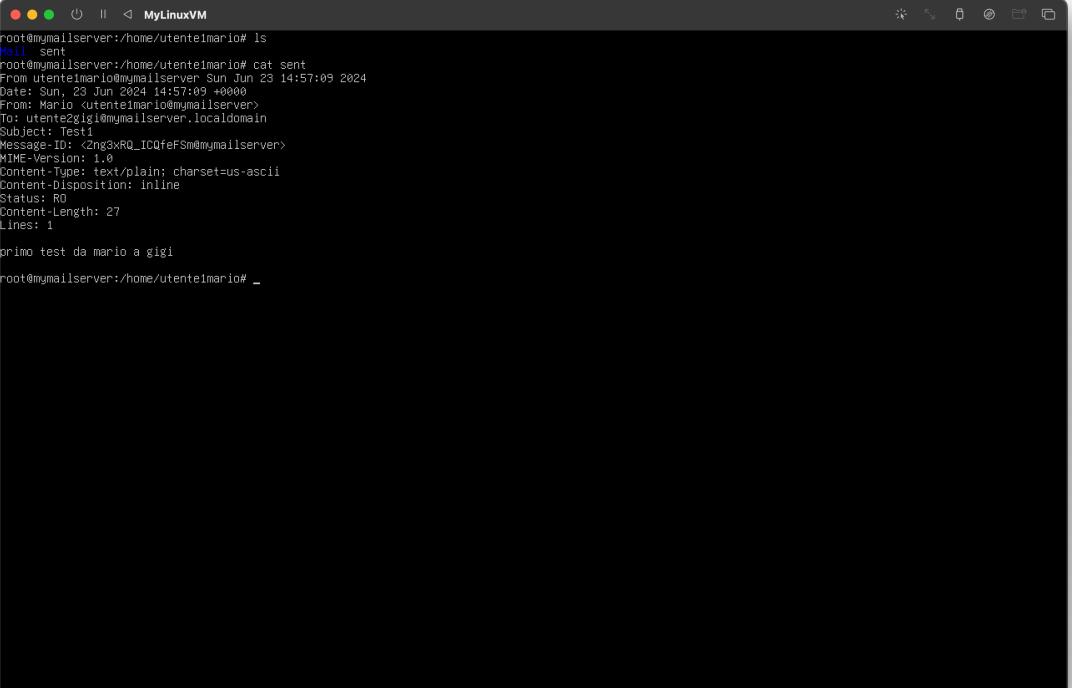
-> posta elettronica di utente1mario : messaggio ricevuto da Luigi  
(utente2gigi)



-> anche la mail di risposta è stata inviata e ricevuta con successo.  
Possiamo visualizzarla e se vogliamo anche rispondere ancora una volta.

Ora ci posizioniamo nell'utente root (root@mymailserver nel nostro caso) usando "sudo -s" e andiamo nella directory "/home/nome\_utente". Nel nostro caso, l'utente è utente1mario.

Dopo esserci posizionati sulla directory corretta, usando "cat sent" possiamo visualizzare le mail inviate da quello specifico utente agli altri :



```
root@mymailserver:/home/utente1mario# ls
mail sent
root@mymailserver:/home/utente1mario# cat sent
From: Utente1mario@mymailserver Sun Jun 23 14:57:09 2024
Date: Sun, 23 Jun 2024 14:57:09 +0000
From: Mario <utente1mario@mymailserver>
To: utente2gigi@mymailserver.localdomain
Subject: Test1
Message-ID: <2ng3XRQ_ICQfeFSm@mymailserver>
MIME-Version: 1.0
Content-Type: text/plain; charset=us-ascii
Content-Disposition: inline
Status: RO
Content-Length: 27
Lines: 1
primo test da mario a gigi
root@mymailserver:/home/utente1mario# _
```

Come possiamo vedere, ci sono tutte le informazioni sulla mail inviata compreso anche il testo.

Arrivati a questo punto possiamo dire che il server di posta elettronica funziona correttamente sia in entrata che in uscita.

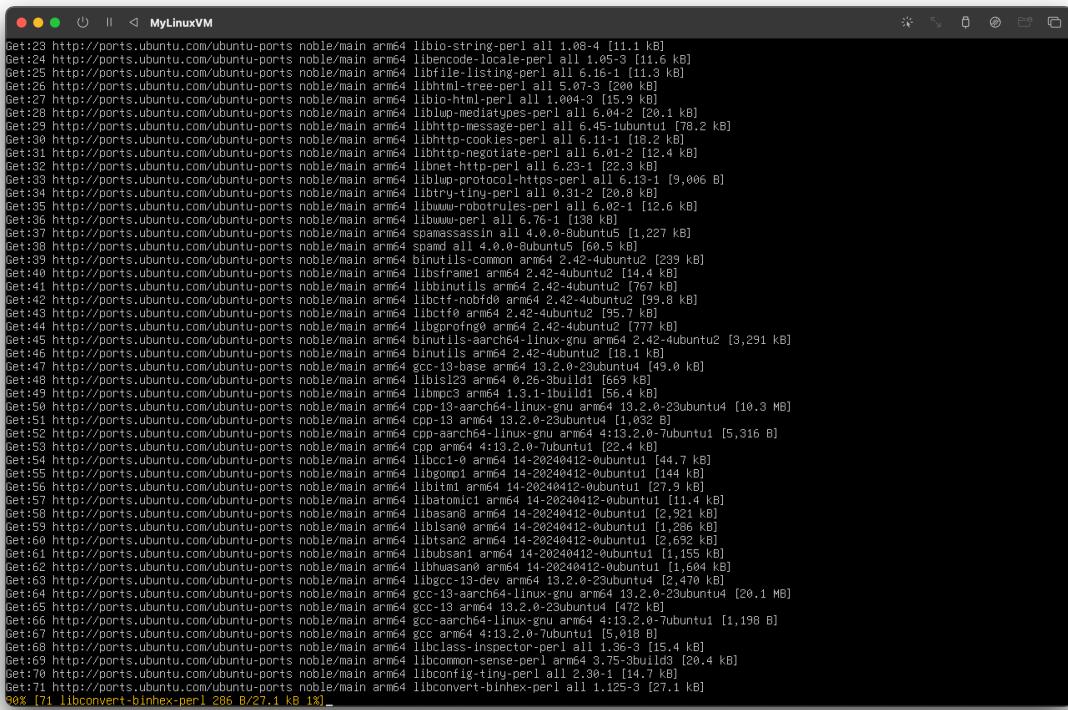
Come esercizio extra, possiamo provare ad installare spamassassin per il filtraggio di mail spam.

# Mail Spam

## (installazione spamassassin)

SpamAssassin è un software open-source utilizzato per il filtraggio dello spam nelle email. Sviluppato dalla Apache Software Foundation, SpamAssassin è progettato per identificare e bloccare messaggi indesiderati, riducendo significativamente la quantità di spam che arriva nelle caselle di posta degli utenti.

Come prima cosa, installiamo spamassassin con il comando “*sudo apt install spamassassin*” e spamassassin Client tramite il comando “*sudo apt install spmc*” :



```
Get:23 http://ports.ubuntu.com/ubuntu-ports noble/main arm64 libbase-string-perl all 1.00-4 [11.1 kB]
Get:24 http://ports.ubuntu.com/ubuntu-ports noble/main arm64 libbasecode-local-perl all 1.05-3 [11.6 kB]
Get:25 http://ports.ubuntu.com/ubuntu-ports noble/main arm64 libfile-listing-perl all 6.16-1 [11.1 kB]
Get:26 http://ports.ubuntu.com/ubuntu-ports noble/main arm64 libhtml-tree-perl all 5.07-3 [300 kB]
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Get:31 http://ports.ubuntu.com/ubuntu-ports noble/main arm64 libhttp-negotiate-perl all 6.01-2 [12.4 kB]
Get:32 http://ports.ubuntu.com/ubuntu-ports noble/main arm64 libinet-http-perl all 6.23-1 [22.3 kB]
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Get:34 http://ports.ubuntu.com/ubuntu-ports noble/main arm64 liblwp-tiny-perl all 0.31-2 [20.8 kB]
Get:35 http://ports.ubuntu.com/ubuntu-ports noble/main arm64 liblwwww-robotrules-perl all 6.02-1 [12.6 kB]
Get:36 http://ports.ubuntu.com/ubuntu-ports noble/main arm64 liblwwww-perl all 6.76-1 [138 kB]
Get:37 http://ports.ubuntu.com/ubuntu-ports noble/main arm64 spamassassin all 4.0.0-Bubunt5 [1,227 kB]
Get:38 http://ports.ubuntu.com/ubuntu-ports noble/main arm64 spamd all 4.0.0-Bubunt5 [60.5 kB]
Get:39 http://ports.ubuntu.com/ubuntu-ports noble/main arm64 binutils-common arm64 2.42-4ubunt2 [239 kB]
Get:40 http://ports.ubuntu.com/ubuntu-ports noble/main arm64 libbsfamei arm64 2.42-4ubunt2 [14.4 kB]
Get:41 http://ports.ubuntu.com/ubuntu-ports noble/main arm64 libbbnutils arm64 2.42-4ubunt2 [767 kB]
Get:42 http://ports.ubuntu.com/ubuntu-ports noble/main arm64 libctf-nobfd0 arm64 2.42-4ubunt2 [99.8 kB]
Get:43 http://ports.ubuntu.com/ubuntu-ports noble/main arm64 libctf0 arm64 2.42-4ubunt2 [95.1 kB]
Get:44 http://ports.ubuntu.com/ubuntu-ports noble/main arm64 libgprofng arm64 2.42-4ubunt2 [777 kB]
Get:45 http://ports.ubuntu.com/ubuntu-ports noble/main arm64 liblphut-aarch64-linux-gnu arm64 14-204ubunt2 [3,291 kB]
Get:46 http://ports.ubuntu.com/ubuntu-ports noble/main arm64 binutils-gold 2.42-4ubunt2 [18.1 kB]
Get:47 http://ports.ubuntu.com/ubuntu-ports noble/main arm64 gcc-13-base arm64 13.2.0-23ubunt4 [49.0 kB]
Get:48 http://ports.ubuntu.com/ubuntu-ports noble/main arm64 libis123 arm64 0.26-3bulld1 [659 kB]
Get:49 http://ports.ubuntu.com/ubuntu-ports noble/main arm64 libmpc3 arm64 1.3.1-i1bulld1 [56.4 kB]
Get:50 http://ports.ubuntu.com/ubuntu-ports noble/main arm64 cpp-13-aarch64-linux-gnu arm64 13.2.0-23ubunt4 [10.3 MB]
Get:51 http://ports.ubuntu.com/ubuntu-ports noble/main arm64 cpp-13-arm64 13.2.0-23ubunt4 [1,032 B]
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Get:57 http://ports.ubuntu.com/ubuntu-ports noble/main arm64 libatomic1 arm64 14-20240412-0ubunt1 [11.4 kB]
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Get:59 http://ports.ubuntu.com/ubuntu-ports noble/main arm64 liblsan arm64 14-20240412-0ubunt1 [1,266 kB]
Get:60 http://ports.ubuntu.com/ubuntu-ports noble/main arm64 libtsan2 arm64 14-20240412-0ubunt1 [2,692 kB]
Get:61 http://ports.ubuntu.com/ubuntu-ports noble/main arm64 libubsan1 arm64 14-20240412-0ubunt1 [1,155 kB]
Get:62 http://ports.ubuntu.com/ubuntu-ports noble/main arm64 libhusan1 arm64 14-20240412-0ubunt1 [1,604 kB]
Get:63 http://ports.ubuntu.com/ubuntu-ports noble/main arm64 libgcc-13-dev arm64 13.2.0-23ubunt4 [2,470 kB]
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Get:67 http://ports.ubuntu.com/ubuntu-ports noble/main arm64 libgcc-arm64-13.2.0-23ubunt1 [1,019 B]
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Get:69 http://ports.ubuntu.com/ubuntu-ports noble/main arm64 libcommon-sense-perl arm64 3.75-3build3 [20.4 kB]
Get:70 http://ports.ubuntu.com/ubuntu-ports noble/main arm64 libconfig-tiny-perl all 2.30-1 [14.7 kB]
Get:71 http://ports.ubuntu.com/ubuntu-ports noble/main arm64 libconvert-binhex-perl all 1.125-3 [27.1 kB]
90% [71 libconvert-binhex-perl 296 B/27.1 kB 1%]
```

Dopo l'installazione di spamassassin e spmc, andiamo a fare un backup del file “/etc/default/spamd” e lo salviamo in “/etc/spamassassin/local.cf.bk” con il comando “*sudo mv /etc/default/spamd /etc/spamassassin/local.cf.bk*”.



```

aptroot      deluser.conf      hosts.allow      logrotate.conf      network      quotagrpadmins      sos      update-notifier
apt          depmod.d        hosts.deny       logrotate.d        networks      quota.tab      spamassassin      usb_modeswitch.conf
bash.bashrc  dhclient        interfaces       logrotate.d        networks      rc0.d        ssh      usb_modeswitch.conf
bash_completion.d dhclient.conf    inputrc        machine-id      nftables.conf      rc0.d        ssh      user.conf
binhexsport.blacklist ez2crub.conf   inserv.conf.d  iproute2        magic.mime      rc2.d        subid      vconsole.conf
binfmt.d     ethertypes     isoconf        iproute2        magic.mime      rc3.d        subid-     vconsole-tools
cgroup       issue          isoconf        iproute2        magic.mime      rc4.d        subid-     vtrgb
ca-certificates fuse          issue.net      iproute2        os-release     rc5.d        subuid     warnquota.conf
cloud        fuse.conf      kernel        mailcap.order  overlayroot.conf  rc6.d        subuid.    wgetrc
console-setup fixed          landscape     mdadm        manpath.config  rc0.d        sudo.conf  sudours
corestore    gai.conf       lddao         mime_types    pan.conf      resolv.conf  sudoers     xattr.conf
corestore.encrypted gnutls       ld.so.cache  passwd       pan.d        resolvconf  sudo_logrvd.conf xdg
cron        gprofing.rc    ld.so.conf      passwd-      pan.d        rmt        supercat   xml
cron.daily   cron          ldconfig       passwd-      rpc         sysctl.conf zsh_command_not_found
cron.hourly  group         legal          modules      perl        syslog.conf xdg
cron.monthly group         libaudit.conf  modules-load.d  perl        syslogd     systemd
crontab     gshadow       libaudit.conf  modules-load.d  pm          screenrc    systemctl
cron.weekly  gshadow       libblkdev     mtab         polkit-1    secrity     terminfo
cron1       gshadow       libblkdev     multipath     pollinate   selinux     timezone
root@mymailserver:/etc/default# default
root@mymailserver:/etc/default# ls
aptroot      cron        dbus      grub.d      keyboard      mdadm      networkd-dispatcher  pollinate  rsync  ssh      ufw
apt          cron.conf   grub     grub.ucf-dist locale      motd-news  open-iscsi      quota      spamd  sysstat  useradd
root@mymailserver:/etc/default# cat spamd
# Duncan Findlay

# WARNING: please read README.spamd before using.
# There may be security risks.

# Options
# See man spamd for possible options. The -d option is automatically added.

# Spamassassin uses a preforking model, so be carefull! You need to
# make sure --max-children is not set to anything higher than 5,
# unless you know what you're doing.

OPTIONS="--create-prefs --max-children 5 --helper-home-dir"

# Pid file
# Where should spamd write its PID to file? If you use the -u or
# -c username option above, this needs to be writable by that user.
# Note that this setting is not used when spamd is managed by systemd
# PIDFILE="/run/spamd.pid"

# Set nice level of sp amd
#NICE=-nicelevel 19
#root@mymailserver:/etc/default#

```

Di seguito, andiamo a editare il file “/etc/spamassassin/local.cf” usando “sudo nano /etc/spamassassin/local.cf” e ci aggiungiamo le seguenti righe :

```

GNU nano 7.2                               /etc/spamassassin/local.cf +
-----[REDACTED]-----
#Header-Sender Subject ***** SPAM_SCORE_ *****
report_safe      0
required_score   5.0
use_bayes        1
use_bayes_rules  1
use_auto_learn   1
use_dcc_checks   0
use_rar2         0
use_urid         0
use_uror         0
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```

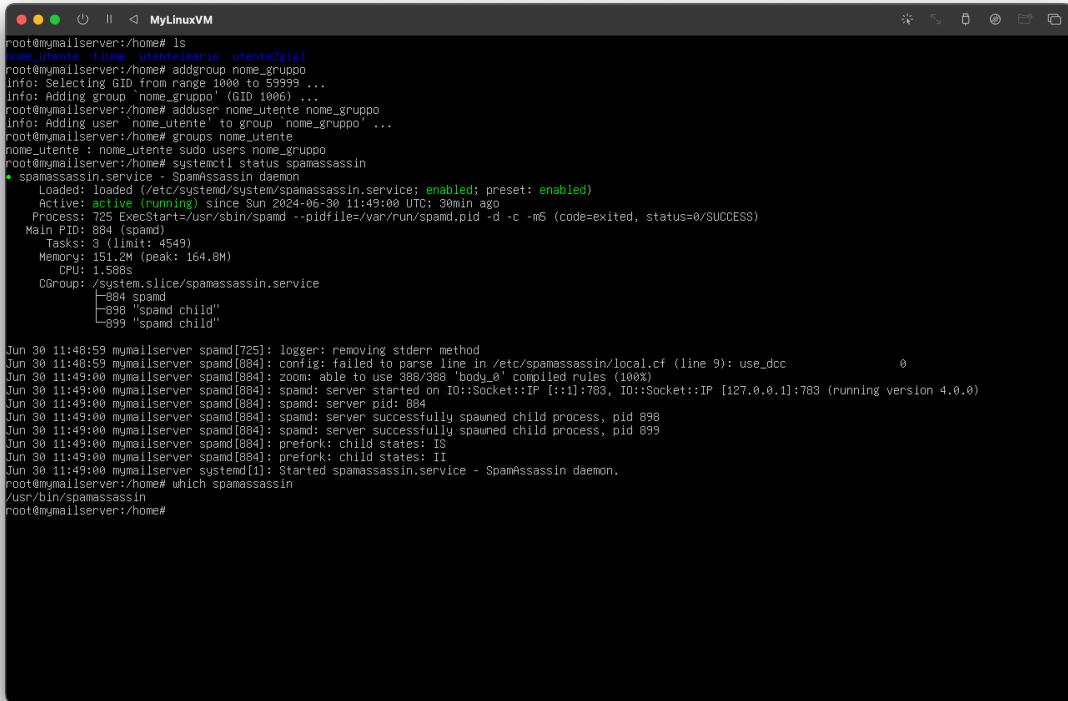
Poi, andiamo a editare il file “/etc/postfix/master.cf” nel seguente modo aggiungendo le righe sotto a “smtp”:

```
# Postfix master process configuration file. For details on the format
# of the file, see the master(5) manual page (command: "man 5 master" or
# on-line: http://www.postfix.org/master.5.html).
#
# Do not forget to execute "postfix reload" after editing this file.
#
# ====================================================
# service type private unpriv chroot wakeup maxproc command + args
# (yes) (yes) (no) (never) (100)
# ====================================================
smtp      inet  n   -   y    -     -       smtpd
-o content_filters=spamassassin
spamassassin unix -n  n   -     -       pipe
user=spamc argv=/usr/bin/spamc -f -e
/usr/sbin/sendmail -oL -f ${sender} ${recipient}
#smtp      inet  n   -   y    -     1       postscreen
#smtpd     pass  -   -   y    -     0       smtpd
#dnsblog   unix  -   -   y    -     0       dnsblog
#tlsproxy  unix  -   -   y    -     0       tlsproxy
# Choose one: enable submission for loopback clients only, or for any client.
#127.0.0.1:submission inet n   -   y    -     -       smtpd
#submission inet n   -   y    -     -       smtpd
# -o syslog_name=postfix/submission
# -o smtpd_tls_security_level=encrypt
# -o smtpd_sasl_auth_enable=yes
# -o smtpd_tls_auth_only=yes
# -o local_header_rewrite_clients=static:all
# -o smtpd_reject_unlisted_recipient=no
# Instead of specifying complex smtpd_<xxx>_restrictions here,
# specify smtpd_<xxx>_restrictions=mua_.<xxx>.restrictions"
# here, and specify mua_.<xxx>.restrictions in main.cf (where
# "<xxx>" is "client", "hello", "sender", "relay", or "recipient").
# -o smtpd_client_restrictions=
# -o smtpd_helo_restrictions=
# -o smtpd_sender_restrictions=
# -o smtpd_relay_restrictions=
# -o smtpd_recipient_restrictions=permit_sasl_authenticated,reject
# -o smtpd_milter_macro_name=ORIGINATING
# Choose one: enable submissions for loopback clients only, or for any client.
#127.0.0.1:submission inet n   -   y    -     -       smtpd
#submission inet n   -   y    -     -       smtpd
# -o syslog_name=postfix/submissions
# -o smtpd_tls_wrappermode=yes
# -o smtpd_sasl_auth_enable=yes
```

Abbiamo quasi concluso. Non ci resta che riavviare i servizi e controllare che funzioni tutto e che non dia errori :

```
root@mymailserver:/home# sudo systemctl restart postfix.service
root@mymailserver:/home# sudo systemctl enable spamassassin.service
root@mymailserver:/home# sudo systemctl start spamassassin.service
root@mymailserver:/home#
```

Abbiamo terminato. L'ultimissima cosa che possiamo fare è vedere se lo stato di spamassassin è attivo con il comando "sudo systemctl status spamassassin :



```
root@mymailserver:/home# ls
nome_utente  flume  utenteimario  utente@gigi
root@mymailserver:/home# addgroup nome_gruppo
Info: Selecting GID from range 1000 to 59999 ...
Info: Adding group 'nome_gruppo' (GID 1006) ...
root@mymailserver:/home# adduser nome_utente nome_gruppo
Info: Adding user 'nome_utente' to group 'nome_gruppo'
root@mymailserver:/home# groups nome_utente
nome_utente : nome_utente sudo users nome_gruppo
root@mymailserver:/home# systemctl status spamassassin
● spamassassin.service - SpamAssassin daemon
   Loaded: loaded (/etc/systemd/system/spamassassin.service; enabled; preset: enabled)
   Active: active (running) since Sun 2024-06-30 11:49:00 UTC; 30min ago
     Process: 725 ExecStart=/usr/sbin/spamd --pidfile=/var/run/spamd.pid -d -c -mS (code=exited, status=0/SUCCESS)
    Main PID: 884 (spamd)
      Tasks: 3 (limit: 4549)
        Memory: 151.2M (peak: 164.8M)
          CPU: 1.588s
        CGroup: /system.slice/spamassassin.service
            ├─884 spamd
            ├─898 "spamd child"
            └─899 "spamd child"

Jun 30 11:48:59 mymailserver spamd[725]: logger: removing stderr method
Jun 30 11:49:00 mymailserver spamd[884]: config: failed to parse line in /etc/spamassassin/local.cf (line 9): use_dcc
Jun 30 11:49:00 mymailserver spamd[884]: config: unable to use 500/388 'body_0' compiled rules (100%)
Jun 30 11:49:00 mymailserver spamd[884]: spamd: server started on IO::Socket::IP [::1]:703, IO::Socket::IP [127.0.0.1]:703 (running version 4.0.0)
Jun 30 11:49:00 mymailserver spamd[884]: spamd: server pid: 884
Jun 30 11:49:00 mymailserver spamd[884]: spamd: server successfully spawned child process, pid 898
Jun 30 11:49:00 mymailserver spamd[884]: spamd: server successfully spawned child process, pid 899
Jun 30 11:49:00 mymailserver spamd[884]: prefork: child states: IS
Jun 30 11:49:00 mymailserver spamd[884]: prefork: child states: II
Jun 30 11:49:00 mymailserver systemd[1]: Started spamassassin.service - SpamAssassin daemon.
root@mymailserver:/home# which spamassassin
/usr/bin/spamassassin
root@mymailserver:/home#
```