

РОССИЙСКИЙ УНИВЕРСИТЕТ ДРУЖБЫ НАРОДОВ

Факультет физико-математических и естественных наук

Кафедра прикладной информатики и теории вероятностей

ОТЧЕТ

ПО ЛАБОРАТОРНОЙ РАБОТЕ №9

дисциплина: администрирование локальных подсистем

Студент: Саинт-Амур Измаэль

Группа: НПИбд-02-20

МОСКВА

2022 г.

Постановка задачи

Приобретение практических навыков по установке и простейшему конфигурированию POP3/IMAP-сервера.

Выполнение работы

9.4.1. Установка Dovecot

1. На виртуальной машине server и открыл терминал. Перешел в режим суперпользователя:

2. Установил необходимые для работы пакеты:

```
saismael@server.saismael.net ~]$ sudo -i
[sudo] password for saismael:
[root@server.saismael.net ~]# dnf -y install dovecot telnet
Last metadata expiration check: 2:22:37 ago on Thu 08 Dec 2022 03:58:50 AM UTC
Dependencies resolved.
=====
Package           Arch      Version                               Repository      Size
=====
Installing:
dovecot            x86_64    1:2.3.16-7.el9                       appstream       4.7
telnet             x86_64    1:0.17-85.el9                        appstream        63
Installing dependencies:
clucene-core       x86_64    2.3.3.4-42.20130812.e8e3d20git.el9   appstream      585
libexttextcat      x86_64    3.4.5-11.el9                         appstream      209
Transaction Summary
=====
Install 4 Packages

Total download size: 5.6 M
Installed size: 20 M
Downloading Packages:
(1/4): telnet-0.17-85.el9.x86_64.rpm      43 kB/s | 63 kB      00:01
(2/4): libexttextcat-3.4.5-11.el9.x86_64 143 kB/s | 209 kB     00:01
```

9.4.2. Настройка dovecot

1. В конфигурационном файле /etc/dovecot/dovecot.conf прописал список почтовых протоколов, по которым разрешено работать Dovecot:

```
dovecot.conf [-M--] 21 L:[ 15+ 9 24/102] *(1176/4316b) 0010 0x00A [*][X]
# 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 = imap pop3

# A comma separated list of IPs or hosts where to listen in for connections..
# "*" listens in all IPv4 interfaces, "::" listens in all IPv6 interfaces.
# If you want to specify non-default ports or anything more complex,
# edit conf.d/master.conf.
#listen = *, ::

# Base directory where to store runtime data.
#base_dir = /var/run/dovecot/

# Name of this instance. In multi-instance setup doveadm and other commands
# can use -i <instance_name> to select which instance is used (an alternative
```

2. В конфигурационном файле /etc/dovecot/conf.d/10-auth.conf указал метод аутентификации plain:

```
10-auth.conf [----] 0 L:[ 82+10 92/128] *(4138/5248b) 0035 0x023 [*][X]
# Path for Samba's ntlm auth helper binary.
#auth_winbind_helper_path = /usr/bin/ntlm_auth

# 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
# gss-spnego
# NOTE: See also disable_plaintext_auth setting.
auth_mechanisms = plain

##
## Password and user databases
1Help 2Save 3Mark 4Replac 5Copy 6Move 7Search 8Delete 9PullDn10Quit
```

3. В конфигурационном файле /etc/dovecot/conf.d/auth-system.conf.ext проверил, что для поиска пользователей и их паролей используется pam и файл passwd:

```

auth-sys-conf.ext  [----]  0 L:[ 7+ 0  7/ 75] *(188 /2182b) 0035 0x023 [*][X]
# PAM is typically used with either userdb passwd or userdb static.
# REMEMBER: You'll need /etc/pam.d/dovecot file created for PAM
# authentication to actually work. <doc/wiki/PasswordDatabase.PAM.txt>
passdb {
    driver = pam
    # [session=yes] [setcred=yes] [failure_show_msg=yes] [max_requests=<n>]
    # [cache_key=<key>] [<service name>]
    #args = dovecot
}

# System users (NSS, /etc/passwd, or similar).
# In many systems nowadays this uses Name Service Switch, which is
# configured in /etc/nsswitch.conf. <doc/wiki/AuthDatabase.Passwd.txt>
#passdb {
#    #driver = passwd
#    # [blocking=no]
#    #args =
#}

# Shadow passwords for system users (NSS, /etc/shadow or similar).
# Deprecated by PAM nowadays.
# <doc/wiki/PasswordDatabase.Shadow.txt>
1Help 2Save 3Mark 4Replac 5Copy 6Move 7Search 8Delete 9PullDn 10Quit

```

```

auth-sys-conf.ext  [-M--]  0 L:[ 45+ 9  54/ 75] *(1425/2182b) 0010 0x00A [*][X]
##
# System users (NSS, /etc/passwd, or similar). In many systems nowadays this
# uses Name Service Switch, which is configured in /etc/nsswitch.conf.
userdb {
    # <doc/wiki/AuthDatabase.Passwd.txt>
    driver = passwd
    # [blocking=no]
    #args =

    # Override fields from passwd
    #override_fields = home=/home/virtual/%u
}

# Static settings generated from template <doc/wiki/UserDatabase.Static.txt>
#userdb {
#    #driver = static
#    # Can return anything a userdb could normally return. For example:
#    #
#    # args = uid=500 gid=500 home=/var/mail/%u
#    #
#    # LDA and LMB needs to look up users only from the userdb. This of course

```

4. В конфигурационном файле /etc/dovecot/conf.d/10-mail.conf настроил месторасположение почтовых ящиков пользователей:


```

10-mail.conf [----] 0 L:[ 7+ 0 7/417] *(196 /17795b) 0035 0x023 [*][X]
# 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/%n/%n:INDEX=/var/indexes/%d/%n/%n
#
# <doc/wiki/MailLocation.txt>
1Help 2Save 3Mark 4Replac 5Copy 6Move 7Search 8Delete 9PullDn10Quit

```

5. В Postfix задал каталог для доставки почты:

6. Сконфигуровал межсетевой экран, разрешив работать службам протоколов POP3 и IMAP:

7. Восстановил контекст безопасности в SELinux:

8. Перезапустил Postfix и запустил Dovecot:

```

[root@server.saismael.net ~]#
[root@server.saismael.net ~]# postconf -e 'home_mailbox = Maildir/'
[root@server.saismael.net ~]#
[root@server.saismael.net ~]# firewall-cmd --get-services
RH-Satellite-6 RH-Satellite-6-capsule amanda-client amanda-k5-client amqp amqps
apcupsd audit bacula bacula-client bb bgp bitcoin bitcoin-rpc bitcoin-testnet bi
tcoin-testnet-rpc bittorrent-lsd ceph ceph-mon cfengine cockpit collectd condor-
collector ctdb dhcp dhcpv6 dhcpv6-client distcc dns dns-over-tls docker-registry
docker-swarm dropbox-lansync elasticsearch etcd-client etcd-server finger forem
an foreman-proxy freeipa-4 freeipa-ldap freeipa-ldaps freeipa-replication freeip
a-trust ftp galera ganglia-client ganglia-master git grafana gre high-availabili
ty http https imap imaps ipp ipp-client ipsec irc ircs iscsi-target isns jenkins
kadmin kdeconnect kerberos kibana klogin kpasswd kprop kshell kube-api kube-api
server kube-control-plane kube-controller-manager kube-scheduler kubelet-worker
ldap ldaps libvirt libvirt-tls lightning-network llmnr managesieve matrix mdns m
emcache minidlna mongodb mosh mountd mqtt mqtt-tls ms-wbt mssql murmur mysql nbd
netbios-ns nfs nfs3 nmea-0183 nrpe ntp nut openvpn ovirt-imageio ovirt-storagec
onsole ovirt-vmconsole plex pmcd pmproxy pmwebapi pmwebapis pop3 pop3s postgresq
l privoxy prometheus proxy-dhcp ptp pulseaudio puppetmaster quassel radius rdp r
edis redis-sentinel rpc-bind rquotad rsh rsyncd rtsp salt-master samba samba-cl
ient samba-dc sane sip sips slp smtp smtp-submission smtps snmp snmptrap spideroa
k-lansync spotify-sync squid sssd ssh ssh-custom steam-streaming svdrp svn synct
hing syncthing-gui synergy syslog syslog-tls telnet tentacle tftp tile38 tinc to
r-socks transmission-client upnp-client vdsd vnc-server wbem-http wbem-https wir

```

```

[root@server.saismael.net ~]# firewall-cmd --add-service=pop3 --permanent
success
[root@server.saismael.net ~]# firewall-cmd --add-service=pop3s --permanent
success
[root@server.saismael.net ~]# firewall-cmd --add-service=imap --permanent
success
[root@server.saismael.net ~]# firewall-cmd --add-service=imaps --permanent
success
[root@server.saismael.net ~]# firewall-cmd --reload
success
[root@server.saismael.net ~]# firewall-cmd --list-services
cockpit dhcp dhcpv6-client dns http https imap imaps pop3 pop3s smtp ssh
[root@server.saismael.net ~]#
[root@server.saismael.net ~]# restorecon -vR /etc
[root@server.saismael.net ~]#
[root@server.saismael.net ~]# systemctl restart postfix
[root@server.saismael.net ~]#
[root@server.saismael.net ~]# systemctl enable dovecot
Created symlink /etc/systemd/system/multi-user.target.wants/dovecot.service → /usr/lib/systemd/system/dovecot.service.
[root@server.saismael.net ~]# systemctl start dovecot
[root@server.saismael.net ~]#

```

9.4.3. Проверка работы Dovecot

1. На дополнительном терминале виртуальной машины server запустил мониторинг работы почтовой службы:

```

[root@server.saismael.net ~]# tail -f /var/log/maillog
Dec  8 06:01:48 server postfix/postfix-script[988]: starting the Postfix mail system
Dec  8 06:01:48 server postfix/master[991]: daemon started -- version 3.5.9, configuration /etc/postfix
Dec  8 07:15:55 server postfix/postfix-script[3670]: stopping the Postfix mail system
Dec  8 07:15:55 server postfix/master[991]: terminating on signal 15
Dec  8 07:15:55 server postfix/postfix-script[3674]: waiting for the Postfix mail system to terminate
Dec  8 07:15:58 server postfix/postfix-script[3749]: starting the Postfix mail system
Dec  8 07:15:58 server postfix/master[3751]: daemon started -- version 3.5.9, configuration /etc/postfix
Dec  8 07:16:55 server dovecot[3798]: master: Dovecot v2.3.16 (7e2e900c1a) starting up for imap, pop3 (core dumps disabled)
Dec  8 07:50:39 server dovecot[3800]: imap-login: Disconnected: Connection closed: read(size=509) failed: Connection reset by peer (disconnected before auth was ready, waited 1 secs): user=<>, rip=192.168.1.30, lip=192.168.1.1, session=<PxUTS0zvUJHAqAEe>
Dec  8 07:50:40 server dovecot[3800]: imap-login: Disconnected: Too many invalid commands (no auth attempts in 0 secs): user=<>, rip=192.168.1.30, lip=192.168.1

```

2. На терминале сервера для просмотра имеющейся почты использовал:
3. Для просмотра mailbox пользователя на сервере использовал:

```

root@server.saismael.net ~]# MAIL=~/.Maildir mail
-nail: No mail for root at /root/Maildir
-nail: /root/Maildir: No such entry, file or directory
root@server.saismael.net ~]# dovecadm mailbox list -u saismael
doveadm(3878): Error: Namespace '': Mail storage autodetection failed with home=home/saismael
root@server.saismael.net ~]#

```


4. На виртуальной машине client открыл терминал. Перейдите в режим суперпользователя:

`sudo -i`

5. Установил почтовый клиент:

```
[saismael@client.saismael.net ~]$ sudo -i
[sudo] password for saismael:
[root@client.saismael.net ~]# dnf -y install evolution
Last metadata expiration check: 2:03:15 ago on Thu 08 Dec 2022 05:18:15 AM UTC.
Dependencies resolved.
=====
Package                                Arch      Version      Repository    Size
=====
Installing:
evolution                             x86_64     3.40.4-6.el9 appstream     3.7 M
Installing dependencies:
evolution-langpacks                   noarch    3.40.4-6.el9 appstream     5.6 M
highlight                             x86_64    3.60-5.el9   appstream     880 k
Transaction Summary
=====
Install 3 Packages

Total download size: 10 M
Installed size: 56 M
Downloading Packages:
(1/3): highlight-3.60-5.el9.x86_64.rpm 199 kB/s | 880 kB 00:04
(2/3): evolution-3.40.4-6.el9.x86_64.rpm 391 kB/s | 3.7 MB 00:09
(3/3): evolution-langpacks-3.40.4-6.el9-noarch 107 kB/s | 5.6 MB 00:11
```

6. Запустил и настроил почтовый клиент Evolution:

Receiving Email

Welcome
Restore from Backup
Identity
Receiving Email
Receiving Options
Sending Email
Account Summary
Done

Server Type: IMAP

Description: For reading and storing mail on IMAP servers.

Configuration

Server: mail.saismael.netPort: 143

Username: saismael

Security

Encryption method: TLS on a dedicated port

Authentication

Check for Supported TypesPassword

CancelBackNext

Sending Email

Welcome
Restore from Backup
Identity
Receiving Email
Receiving Options
Sending Email
Account Summary
Done

Server Type: SMTP

Description: For delivering mail by connecting to a remote mailhub using SMTP.

Configuration

Server: mail.saismael.netPort: 25

☐ Server requires authentication

Security

Encryption method: No encryption

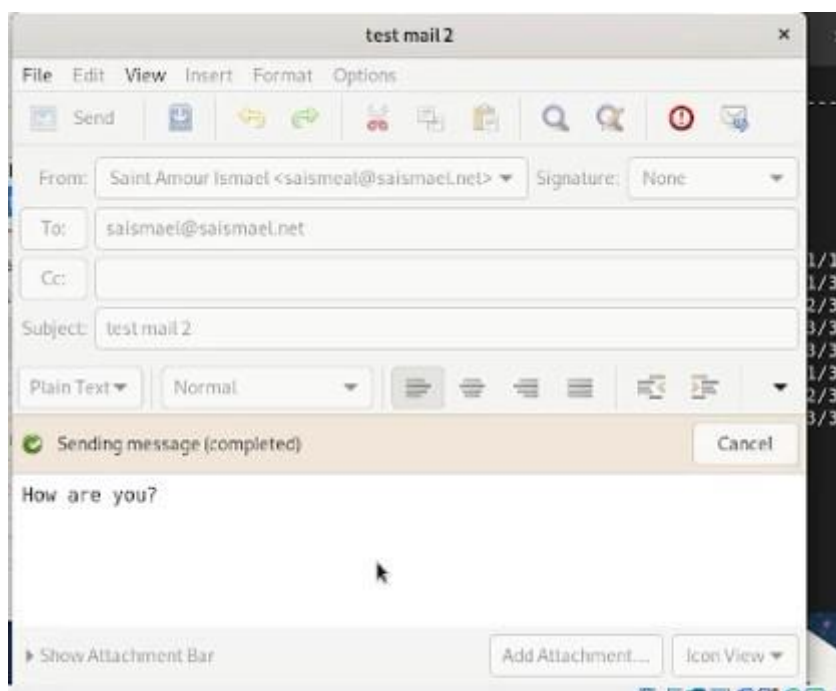
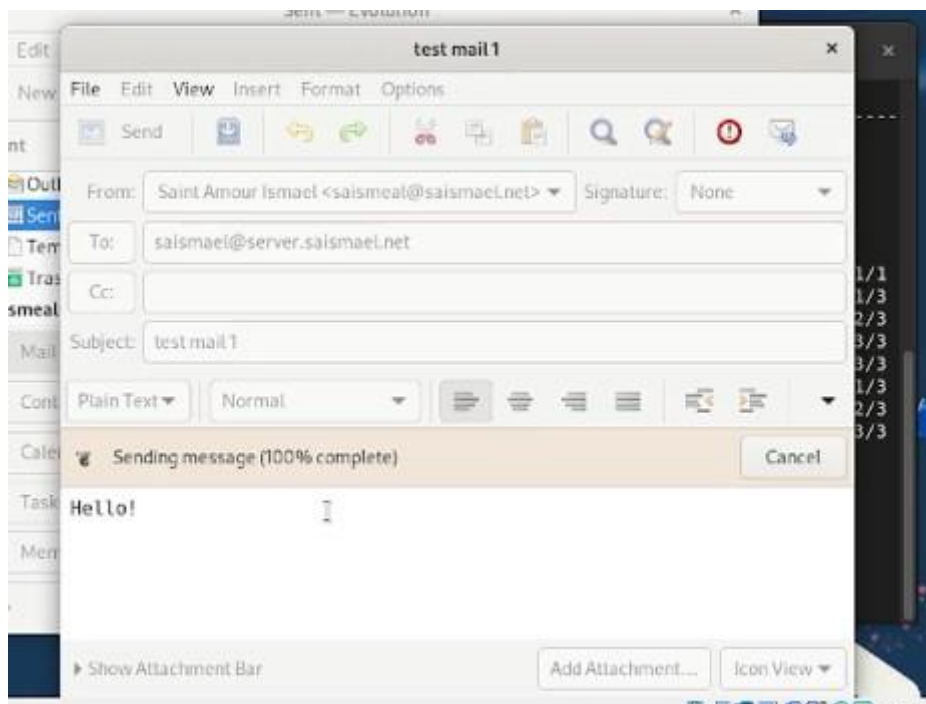
Authentication

Type: Check for Supported TypesPLAIN

Username: saismael

CancelFinishBackNext

7. Из почтового клиента отправил себе несколько тестовых писем



8. Параллельно посмотрите, какие сообщения выдаются при мониторинге почтовой службы на сервере, а также при использовании dovecadm и mail.

```
[root@server.saismael.net ~]# dovecadm mailbox list -u saismael
INBOX
[root@server.saismael.net ~]# MAIL=~/.Maildir mail
s-nail: No mail for root at /root/Maildir
```

9. Проверьте работу почтовой службы, используя на сервере протокол Telnet: –

```
[root@server.saismael.net ~]# telnet mail.saismael.net 110
Trying 192.168.1.1...
Connected to mail.saismael.net.
Escape character is '^]'.
+OK Dovecot ready.
user saismael
+OK
pass 123456
+OK Logged in.
list
+OK 2 messages:
1 694
2 672
.
retr 1
+OK 694 octets
Return-Path: <saismael@saismael.net>
X-Original-To: saismael@server.saismael.net
Delivered-To: saismael@server.saismael.net
Received: from client.saismael.net (client.saismael.net [192.168.1.30])
        by server.saismael.net (Postfix) with ESMTP id AE236196D5E2
        for <saismael@server.saismael.net>; Thu,  8 Dec 2022 07:54:47 +0000 (UTC
)
Message-ID: <344795476645831ae8f870a17d019649caa8696e.camel@saismael.net>
```

```
Delivered-To: saismael@server.saismael.net
Received: from client.saismael.net (client.saismael.net [192.168.1.30])
        by server.saismael.net (Postfix) with ESMTP id AE236196D5E2
        for <saismael@server.saismael.net>; Thu,  8 Dec 2022 07:54:47 +0000 (UTC
)
Message-ID: <344795476645831ae8f870a17d019649caa8696e.camel@saismael.net>
Subject: test mail 1
From: Saint Amour Ismael <saismael@saismael.net>
To: saismael@server.saismael.net
Date: Thu, 08 Dec 2022 07:54:45 +0000
Content-Type: text/plain
User-Agent: Evolution 3.40.4 (3.40.4-6.el9)
MIME-Version: 1.0
Content-Transfer-Encoding: 7bit

Hello!

.
dele 2
+OK Marked to be deleted.
quit
+OK Logging out, messages deleted.
Connection closed by foreign host.
[root@server.saismael.net ~]#
```

9.4.4. Внесение изменений в настройки внутреннего окружения виртуальной машины

1. На виртуальной машине server перешел в каталог для внесения изменений в настройки внутреннего окружения `/vagrant/provision/server/`. В соответствующие подкаталоги поместил конфигурационные файлы Dovecot:

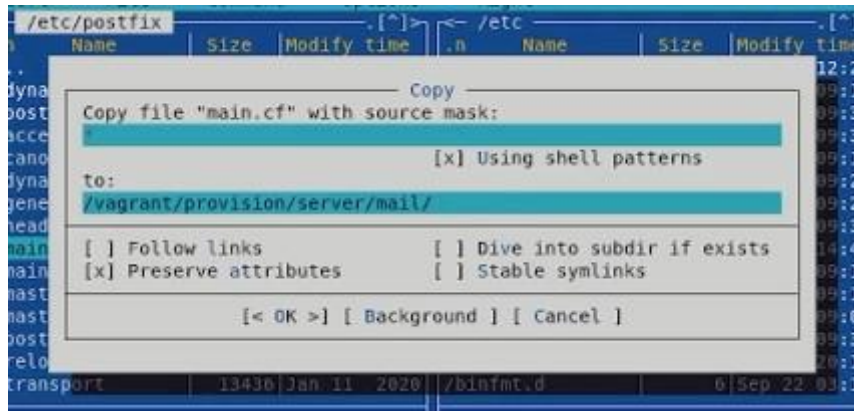

```

[root@server.saismael.net ~]# cd /vagrant/provision/server
[root@server.saismael.net server]# mkdir -p /vagrant/provision/server/mail/etc/dovecot/conf.d
[root@server.saismael.net server]# cp -R /etc/dovecot/dovecot.conf /vagrant/provision/server/mail/etc/dovecot/

[root@server.saismael.net server]# cp -R /etc/dovecot/conf.d/10-auth.conf /vagrant/provision/server/mail/etc/dovecot/conf.d/
[root@server.saismael.net server]# cp -R /etc/dovecot/conf.d/auth-system.conf.ext /vagrant/provision/server/mail/etc/dovecot/conf.d/
[root@server.saismael.net server]# cp -R /etc/dovecot/conf.d/10-mail.conf /vagrant/provision/server/mail/etc/dovecot/conf.d/
[root@server.saismael.net server]#

```

2. Заменял конфигурационный файл Postfix:



3. Внес изменения в файл /vagrant/provision/server/mail.sh, добавив в него строки:

- по установке Dovecot и Telnet;
- по настройке межсетевого экрана;
- по настройке Postfix в части задания месторасположения почтового ящика;
- по перезапуску Postfix и запуску Dovecot.

```

1  #!/bin/bash
2
3  echo "Provisioning script $0"
4
5  echo "Install needed packages"
6  dnf -y install postfix
7  dnf -y install s-nail
8  dnf -y install dovecot telnet
9
10 echo "Copy configuration files"
11 #cp -R /vagrant/provision/server/mail/etc/* /etc
12
13 echo "Configure firewall"
14 firewall-cmd --add-service=smtp --permanent
15 firewall-cmd --reload
16
17 restorecon -vR /etc
18
19 echo "Start postfix service"
20 systemctl enable postfix
21 systemctl start postfix
22
23 echo "Configure postfix"
24 postconf -e 'mydomain = user.net'
25 postconf -e 'myorigin = $mydomain'
26 postconf -e 'inet_protocols = ipv4'
27 postconf -e 'inet_interfaces = all'
28 postconf -e 'mydestination = $myhostname, localhost.$mydomain,
29 □ localhost, $mydomain'
30 postconf -e 'mynetworks = 127.0.0.0/8, 192.168.0.0/16'
31
32 postfix set-permissions
33

```

4. На виртуальной машине client в каталоге /vagrant/provision/client скорректировал файл mail.sh

```

#!/bin/bash

echo "Provisioning script $0"

echo "Install needed packages"
dnf -y install postfix
dnf -y install mailx
dnf -y install evolution

echo "Configure postfix"
postconf -e 'inet_protocols = ipv4'

echo "Start postfix service"
systemctl enable postfix
systemctl start postfix

```

Вывод:

Приобрел практические навыки по установке и простейшему конфигурированию POP3/IMAP-сервера.