

Лабораторная работа №9

Настройка POP3/IMAP сервера

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Вводная часть

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

1. Установите на виртуальной машине server Dovecot и Telnet для дальнейшей проверки корректности работы почтового сервера.
2. Настройте Dovecot.
3. Установите на виртуальной машине client программу для чтения почты Evolution и настройте её для манипуляций с почтой вашего пользователя. Проверьте корректность работы почтового сервера как с виртуальной машины server, так и с виртуальной машины client.
4. Измените скрипт для Vagrant, фиксирующий действия по установке и настройке Postfix и Dovecot в окружении виртуальной машины server, создайте скрипт для Vagrant, фиксирующий действия по установке Evolution в окружении виртуальной машины client. Соответствующим образом внесите изменения в Vagrantfile.

Выполнение лабораторной работы

```
root@server:~  
[eademidova@server.eademidova.net ~]$ sudo -i  
[sudo] password for eademidova:  
[root@server.eademidova.net ~]# dnf -y install dovecot telnet  
Extra Packages for Enterprise Linux 9 - x86_64 6.8 kB/s | 30 kB 00:04  
Extra Packages for Enterprise Linux 9 - x86_64 4.3 MB/s | 20 MB 00:04  
Rocky Linux 9 - BaseOS 2.4 kB/s | 4.1 kB 00:01  
Rocky Linux 9 - AppStream 11 kB/s | 4.5 kB 00:00  
Rocky Linux 9 - Extras 7.7 kB/s | 2.9 kB 00:00  
Dependencies resolved.  
=====
```

Package	Arch	Version	Repository	Size
---------	------	---------	------------	------

```
=====
```

Installing:

dovecot	x86_64	1:2.3.16-10.el9	appstream	4.7 M
telnet	x86_64	1:0.17-85.el9	appstream	63 k

Installing dependencies:

clucene-core	x86_64	2.3.3.4-42.20130812.e8e3d20git.el9	appstream	585 k
libexttextcat	x86_64	3.4.5-11.el9	appstream	209 k

Transaction Summary

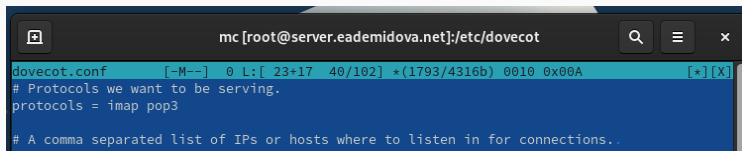
```
=====
```

Install 4 Packages

Total download size: 5.6 M
Installed size: 20 M
Downloading Packages:

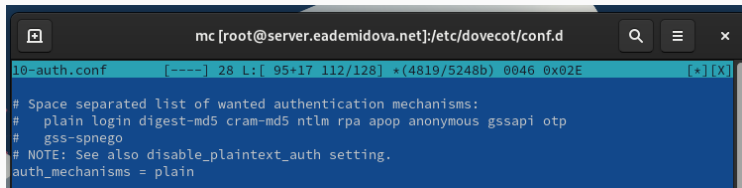
(1/4): telnet-0.17-85.el9.x86_64.rpm	441 kB/s 63 kB	00:00
(2/4): libexttextcat-3.4.5-11.el9.x86_64.rpm	679 kB/s 209 kB	00:00

Рис. 1: Установка Dovecot



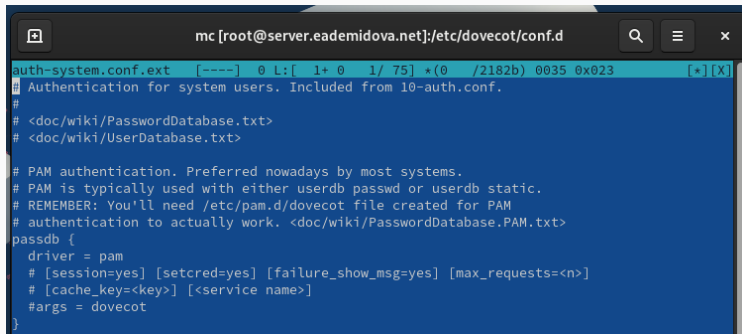
```
mc [root@server.eademidova.net]:/etc/dovecot
dovecot.conf  [-M--] 0 L:[ 23+17 40/102] *(1793/4316b) 0010 0x00A  [*] [X]
# Protocols we want to be serving.
protocols = imap pop3
# A comma separated list of IPs or hosts where to listen in for connections..
```

Рис. 2: Редактирование файла /etc/dovecot/dovecot.conf



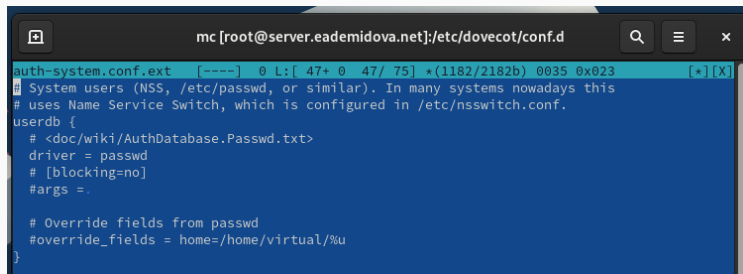
```
mc [root@server.eademidova.net]:/etc/dovecot/conf.d
10-auth.conf [----] 28 L: [ 95+17 112/128] *(4819/5248b) 0046 0x02E [*] [X]
# Space separated list of wanted authentication mechanisms:
#   plain login digest-md5 cram-md5 ntlm rpa apop anonymous gssapi otp
#   gss-spnego
# NOTE: See also disable_plaintext_auth setting.
auth_mechanisms = plain
```

Рис. 3: Редактирование файла /etc/dovecot/conf.d/10-auth.conf



```
mc [root@server.eadimidova.net]:/etc/dovecot/conf.d
auth-system.conf.ext  [----]  0 L:[ 1+ 0 1/ 75] *(0 /2182b) 0035 0x023  [*] [X]
# Authentication for system users. Included from 10-auth.conf.
#
# <doc/wiki/PasswordDatabase.txt>
# <doc/wiki/UserDatabase.txt>
#
# PAM authentication. Preferred nowadays by most systems.
# 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>
passwd {
    driver = pam
    # [session=yes] [setcred=yes] [failure_show_msg=yes] [max_requests=<n>]
    # [cache_key=<key>] [<service name>]
    #args = dovecot
}
```

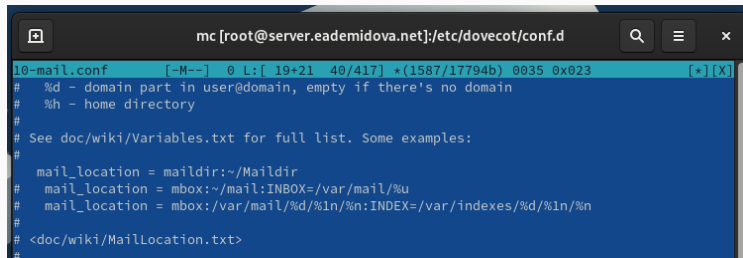
Рис. 4: Просмотр файла /etc/dovecot/conf.d/auth-system.conf.ext



```
mc [root@server.eademidova.net]:/etc/dovecot/conf.d
auth-system.conf.ext [----] 0 L:[ 47+ 0 47/ 75] *(1182/2182b) 0035 0x023 [*][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
}
```

Рис. 5: Просмотр файла /etc/dovecot/conf.d/auth-system.conf.ext



```
mc [root@server.eademidova.net]:/etc/dovecot/conf.d
10-mail.conf [-M--] 0 L:[ 19+21 40/417] *(1587/17794b) 0035 0x023 [*] [X]
# %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>
#
```

Рис. 6: Редактирование файла /etc/dovecot/conf.d/10-mail.conf

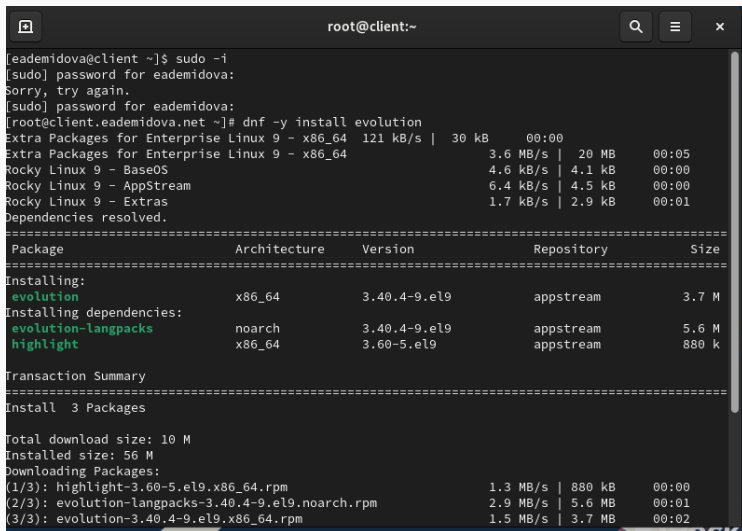
На дополнительном терминале виртуальной машины server запустим мониторинг работы почтовой службы с помощью команды:

```
tail -f /var/log/maillog
```

```
[root@server.eademidova.net conf.d]# systemctl start dovecot
[root@server.eademidova.net conf.d]# MAIL=~/.Maildir mail
s-nail: No mail for root at /root/.Maildir
s-nail: /root/.Maildir: No such entry, file or directory
[root@server.eademidova.net conf.d]# mc

[root@server.eademidova.net conf.d]# doveadm mailbox list -u eademidova
INBOX
[root@server.eademidova.net conf.d]#
```

Рис. 8: Просмотр почты и mailbox



```
root@client:~  
[eademidova@client ~]$ sudo -i  
[sudo] password for eademidova:  
Sorry, try again.  
[sudo] password for eademidova:  
[root@client.eademidova.net ~]# dnf -y install evolution  
Extra Packages for Enterprise Linux 9 - x86_64 121 kB/s | 30 kB 00:00  
Extra Packages for Enterprise Linux 9 - x86_64 3.6 MB/s | 20 MB 00:05  
Rocky Linux 9 - BaseOS 4.6 kB/s | 4.1 kB 00:00  
Rocky Linux 9 - AppStream 6.4 kB/s | 4.5 kB 00:00  
Rocky Linux 9 - Extras 1.7 kB/s | 2.9 kB 00:01  
Dependencies resolved.  
=====
```

Package	Architecture	Version	Repository	Size
Installing:				
evolution	x86_64	3.40.4-9.el9	appstream	3.7 M
Installing dependencies:				
evolution-langpacks	noarch	3.40.4-9.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	1.3 MB/s	880 kB	00:00	
(2/3): evolution-langpacks-3.40.4-9.el9.noarch.rpm	2.9 MB/s	5.6 MB	00:01	
(3/3): evolution-3.40.4-9.el9.x86_64.rpm	1.5 MB/s	3.7 MB	00:02	

Рис. 9: Установка почтового клиента evolution на виртуальную машину client

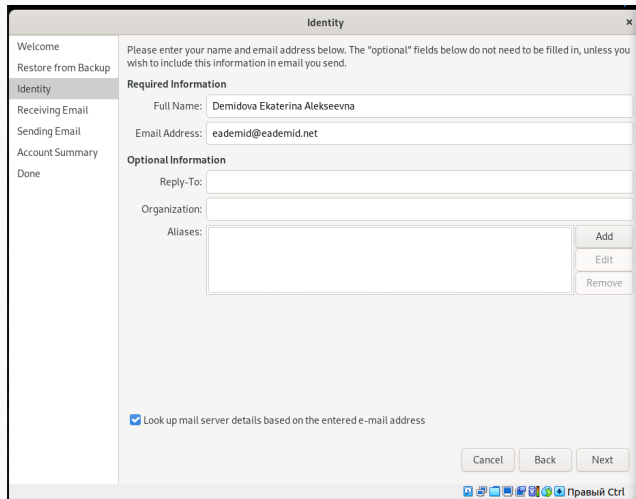


Рис. 10: Настройка учетной записи почтового клиента

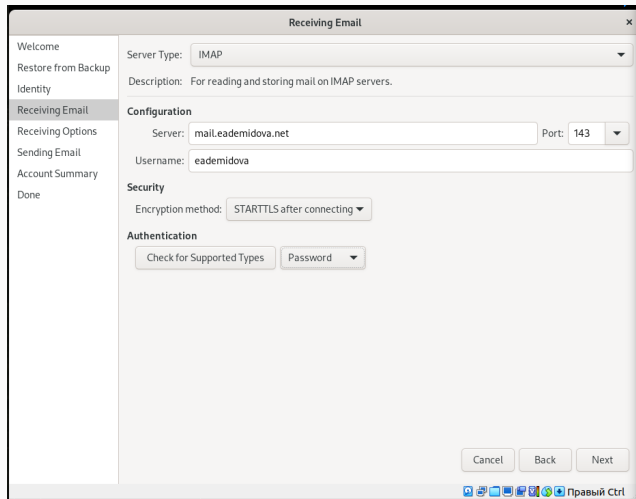


Рис. 11: Настройка IMAP-сервера для входящих сообщений

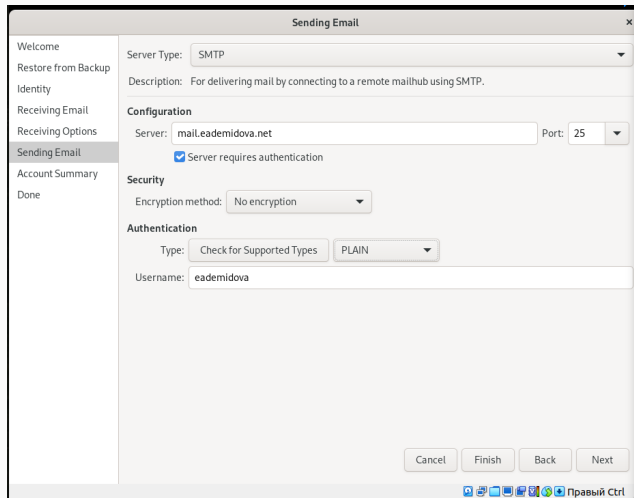


Рис. 12: Настройка SMTP-сервера для исходящих сообщений

Проверка работы Dovecot

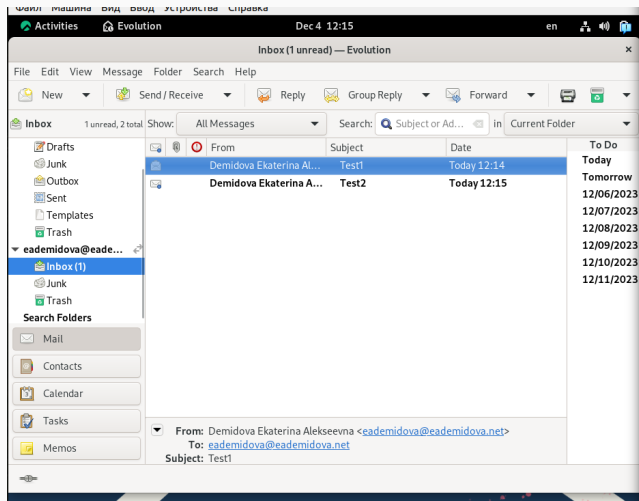
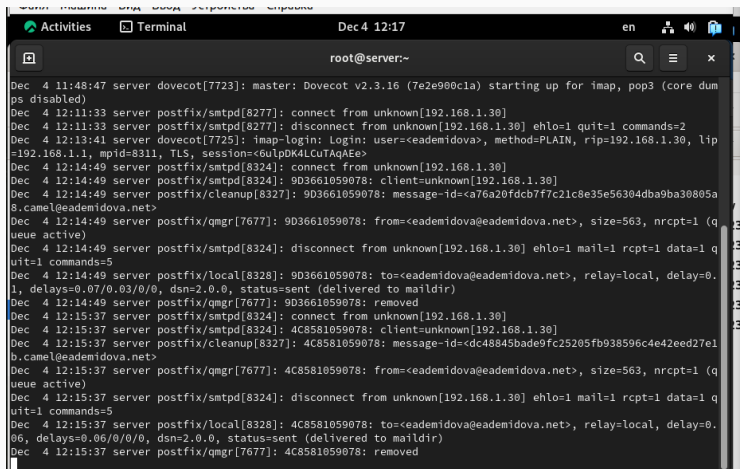


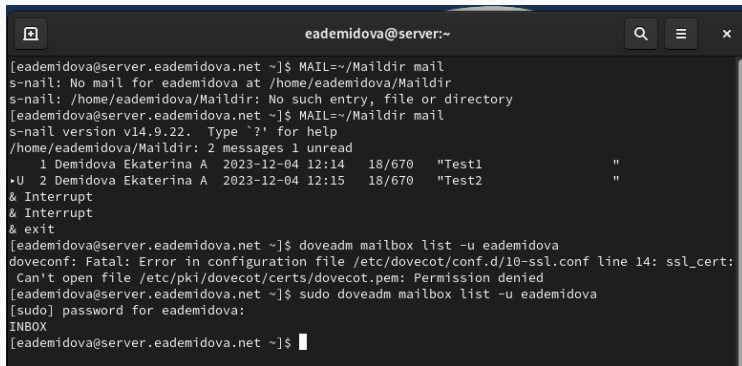
Рис. 13: Проверка получения писем на почтовом клиенте

Проверка работы Dovecot

A screenshot of a Linux terminal window. The title bar shows 'Activities', 'Terminal', and the date 'Dec 4 12:17'. The terminal prompt is 'root@server:~'. The output shows a series of log messages from Dovecot and Postfix. The logs start with Dovecot v2.3.16 starting up for imap and pop3. Then, there are several messages from Postfix smtpd showing connections and disconnections from 192.168.1.30. A Dovecot imap-login message follows, showing a successful login for user 'eademidova'. Then, Postfix smtpd and qmgr messages show an email being processed, including a 'connect from unknown' and a 'disconnect from unknown'. The logs continue with more Postfix messages showing the email being relayed locally and then removed. The terminal window has a dark background and a light-colored text. The logs are in a standard syslog format with timestamps and process identifiers.

```
Dec 4 11:48:47 server dovecot[7723]: master: Dovecot v2.3.16 (7e2e90c1a) starting up for imap, pop3 (core dump disabled)
Dec 4 12:11:33 server postfix/smtpd[8277]: connect from unknown[192.168.1.30]
Dec 4 12:11:33 server postfix/smtpd[8277]: disconnect from unknown[192.168.1.30] ehlo=1 quit=1 commands=2
Dec 4 12:13:41 server dovecot[7725]: imap-login: Login: user=<eademidova>, method=PLAIN, rip=192.168.1.30, lip=192.168.1.1, mpid=8311, TLS, session=<6ulpDK4LCuTAqAEe>
Dec 4 12:14:49 server postfix/smtpd[8324]: connect from unknown[192.168.1.30]
Dec 4 12:14:49 server postfix/smtpd[8324]: 9D3661059078: client=unknown[192.168.1.30]
Dec 4 12:14:49 server postfix/cleanup[8327]: 9D3661059078: message-id=<a76a20fdbcb7f7c21c8e35e56304dba9ba30805a8.camel@eademidova.net>
Dec 4 12:14:49 server postfix/qmgr[7677]: 9D3661059078: from=<eademidova@eademidova.net>, size=563, nrcpt=1 (q ueue active)
Dec 4 12:14:49 server postfix/smtpd[8324]: disconnect from unknown[192.168.1.30] ehlo=1 mail=1 rcpt=1 data=1 q uit=1 commands=5
Dec 4 12:14:49 server postfix/local[8328]: 9D3661059078: to=<eademidova@eademidova.net>, relay=local, delay=0.1, delays=0.07/0.03/0/0, dsn=2.0.0, status=sent (delivered to maildir)
Dec 4 12:14:49 server postfix/qmgr[7677]: 9D3661059078: removed
Dec 4 12:15:37 server postfix/smtpd[8324]: connect from unknown[192.168.1.30]
Dec 4 12:15:37 server postfix/smtpd[8324]: 4C8581059078: client=unknown[192.168.1.30]
Dec 4 12:15:37 server postfix/cleanup[8327]: 4C8581059078: message-id=<dc48845bade9fc25205fb938596c4e42eed27e1b.camel@eademidova.net>
Dec 4 12:15:37 server postfix/qmgr[7677]: 4C8581059078: from=<eademidova@eademidova.net>, size=563, nrcpt=1 (q ueue active)
Dec 4 12:15:37 server postfix/smtpd[8324]: disconnect from unknown[192.168.1.30] ehlo=1 mail=1 rcpt=1 data=1 q uit=1 commands=5
Dec 4 12:15:37 server postfix/local[8328]: 4C8581059078: to=<eademidova@eademidova.net>, relay=local, delay=0.06, delays=0.06/0/0/0, dsn=2.0.0, status=sent (delivered to maildir)
Dec 4 12:15:37 server postfix/qmgr[7677]: 4C8581059078: removed
```

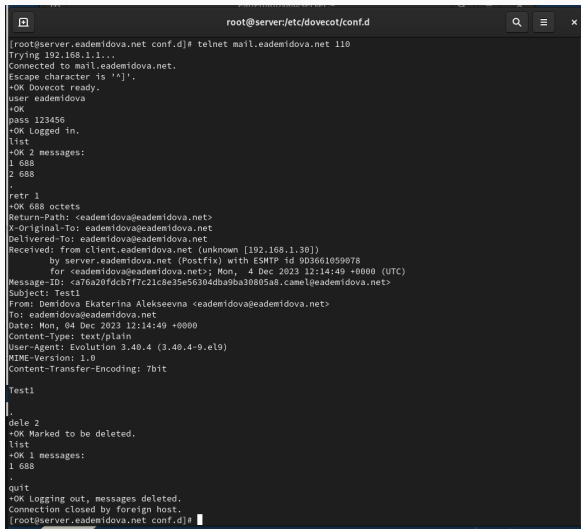
Рис. 14: Просмотр мониторинга почтовой службы на сервере

A terminal window titled 'eademidova@server:~' with search, menu, and close icons in the title bar. The terminal shows the execution of 'MAIL=~/Maildir mail' and 'doveadm mailbox list -u eademidova'. The mail command shows two messages in the mailbox. The doveadm command results in a permission error for the SSL certificate file.

```
[eademidova@server.eademidova.net ~]$ MAIL=~/Maildir mail
s-nail: No mail for eademidova at /home/eademidova/Maildir
s-nail: /home/eademidova/Maildir: No such entry, file or directory
[eademidova@server.eademidova.net ~]$ MAIL=~/Maildir mail
s-nail version v14.9.22.  Type '?' for help
/home/eademidova/Maildir: 2 messages 1 unread
  1 Demidova Ekaterina A  2023-12-04 12:14   18/670  "Test1          "
•U 2 Demidova Ekaterina A  2023-12-04 12:15   18/670  "Test2          "
& Interrupt
& Interrupt
& exit
[eademidova@server.eademidova.net ~]$ doveadm mailbox list -u eademidova
doveconf: Fatal: Error in configuration file /etc/dovecot/conf.d/10-ssl.conf line 14: ssl_cert:
Can't open file /etc/pki/dovecot/certs/dovecot.pem: Permission denied
[eademidova@server.eademidova.net ~]$ sudo doveadm mailbox list -u eademidova
[sudo] password for eademidova:
INBOX
[eademidova@server.eademidova.net ~]$
```

Рис. 15: Просмотр информации о почтовой службе с помощью doveadm и mail

Проверка работы Dovecot

A terminal window titled 'root@server:/etc/dovecot/conf.d' showing a Telnet session with a Dovecot mail server. The user 'root' connects to 'mail.eademidova.net' on port 110. The server responds with 'Dovecot ready.' and prompts for a user and password. After successful authentication, the user issues the 'list' command, showing two messages. Then, the user issues 'retr 1' to retrieve the first message, displaying its full headers and body. Finally, the user issues 'quit', and the server logs out the user and closes the connection.

```
root@server:/etc/dovecot/conf.d

[root@server.eademidova.net conf.d]# telnet mail.eademidova.net 110
Trying 192.168.1.1...
Connected to mail.eademidova.net.
Escape character is '^'.
+OK Dovecot ready.
user eademidova
+OK
pass 123456
+OK Logged in.
list
+OK 2 messages:
1 688
2 688
.
retr 1
+OK 688 octets
Return-Path: <eademidova@eademidova.net>
X-Original-To: eademidova@eademidova.net
Delivered-To: eademidova@eademidova.net
Received: from client.eademidova.net (unknown [192.168.1.30])
        by server.eademidova.net (Postfix) with ESMTP id 9D3661059078
        for <eademidova@eademidova.net>; Mon, 4 Dec 2023 12:14:49 +0000 (UTC)
Message-ID: <a76a20fdbc7f7c21c8e35e56304dba9ba30805a8.camel@eademidova.net>
Subject: Test1
From: Demidova Ekaterina Alekseevna <eademidova@eademidova.net>
To: eademidova@eademidova.net
Date: Mon, 04 Dec 2023 12:14:49 +0000
Content-Type: text/plain
User-Agent: Evolution 3.40.4 (3.40.4-9.el9)
MIME-Version: 1.0
Content-Transfer-Encoding: 7bit

Test1
.
dele 2
+OK Marked to be deleted.
list
+OK 1 messages:
1 688
.
quit
+OK Logging out, messages deleted.
Connection closed by foreign host.
[root@server.eademidova.net conf.d]#
```

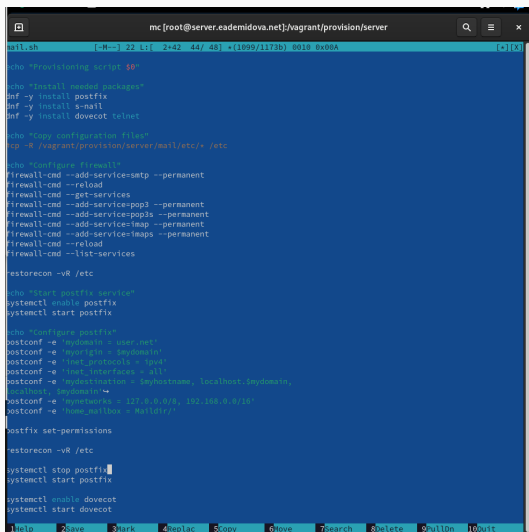
Рис. 16: Проверка почтовой службы с помощью протокола Telnet

Внесение изменений в настройки внутреннего окружения виртуальной машины

```
connection closed by foreign host.  
[root@server.eademidova.net conf.d]# cd /vagrant/provision/server  
[root@server.eademidova.net server]# mkdir -p /vagrant/provision/server/mail/etc/dovecot/conf.d  
[root@server.eademidova.net server]# cp -R /etc/dovecot/dovecot.conf /vagrant/provision/server/mail/etc/dovecot/  
[root@server.eademidova.net server]# cp -R /etc/dovecot/conf.d/10-auth.conf /vagrant/provision/server/mail/etc/d  
ovecot/conf.d/  
[root@server.eademidova.net server]# cp -R /etc/dovecot/conf.d/auth-system.conf.ext /vagrant/provision/server/ma  
il/etc/dovecot/conf.d/  
[root@server.eademidova.net server]# cp -R /etc/dovecot/conf.d/10-mail.conf /vagrant/provision/server/mail/etc/d  
ovecot/conf.d/  
[root@server.eademidova.net server]# cp -R /etc/postfix/main.cf /vagrant/provision/server/mail/etc/postfix/  
cp: cannot create regular file '/vagrant/provision/server/mail/etc/postfix/': Not a directory  
[root@server.eademidova.net server]# cp -R /etc/postfix/main.cf /vagrant/provision/server/mail/etc/postfix  
[root@server.eademidova.net server]#
```

Рис. 17: Создание окружения для внесения изменений в настройки окружающей среды

Внесение изменений в настройки внутреннего окружения виртуальной машины



```
mc [root@server.eademidova.net]:/vagrant/provision/server
mail.sh [-H--] 22 L: 2+42 44/ 48] *(1099/1173b) 0010 0x00A [X]

echo "Provisioning script $0"

echo "Install needed packages"
dnf -y install postfix
dnf -y install s-nail
dnf -y install dovecot telnet

echo "Copy configuration files"
cp -R /vagrant/provision/server/mail/etc/* /etc

echo "Configure firewall"
firewall-cmd --add-service=smtp --permanent
firewall-cmd --reload
firewall-cmd --get-services
firewall-cmd --add-service=pop3 --permanent
firewall-cmd --add-service=pop3s --permanent
firewall-cmd --add-service=imap --permanent
firewall-cmd --add-service=imaps --permanent
firewall-cmd --reload
firewall-cmd --list-services

restorecon -vR /etc

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

echo "Configure postfix"
postconf -e 'mydomain = user.net'
postconf -e 'myorigin = $mydomain'
postconf -e 'inet_protocols = ipv4'
postconf -e 'inet_interfaces = all'
postconf -e 'mydestination = $myhostname, localhost.$mydomain,
localhost.$mydomain'
postconf -e 'mynetworks = 127.0.0.0/8, 192.168.0.0/16'
postconf -e 'home_mailbox = Maildir/'

postfix set-permissions

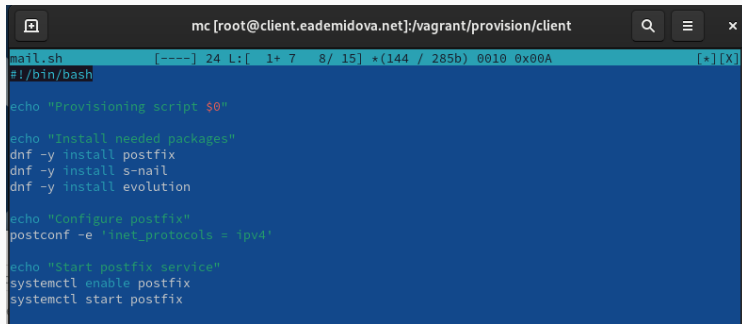
restorecon -vR /etc

systemctl stop postfix
systemctl start postfix

systemctl enable dovecot
systemctl start dovecot
```

Рис. 18: СИзменение файла /vagrant/provision/server/mail.sh

Внесение изменений в настройки внутреннего окружения виртуальной машины



```
mc [root@client.eademidova.net]:/vagrant/provision/client
mail.sh [----] 24 L:[ 1+ 7 8/ 15] *(144 / 285b) 0010 0x00A [*] [X]
#!/bin/bash

echo "Provisioning script $0"

echo "Install needed packages"
dnf -y install postfix
dnf -y install s-nail
dnf -y install evolution

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

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

Рис. 19: Изменение файла /vagrant/provision/client/mail.sh

Заключение

В результате выполнения данной работы были приобретены практические навыки по установке и простейшему конфигурированию POP3/IMAP-сервера.