

Лабораторная работа № 9

Настройка POP3/IMAP сервера

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Раздел 1

1. Информация

1.1 Докладчик

► Митрофанов Тимур Александрович

1.1 Докладчик

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- ▶ Российский университет дружбы народов им. П. Лумумбы

Раздел 2

2. Вводная часть

2.1 Цель работы

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

2.2 Задание

1. Установите на виртуальной машине server Dovecot и Telnet для дальнейшей проверки корректности работы почтового сервера

2.2 Задание

1. Установите на виртуальной машине server Dovecot и Telnet для дальнейшей проверки корректности работы почтового сервера
2. Настройте Dovecot.

2.2 Задание

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.

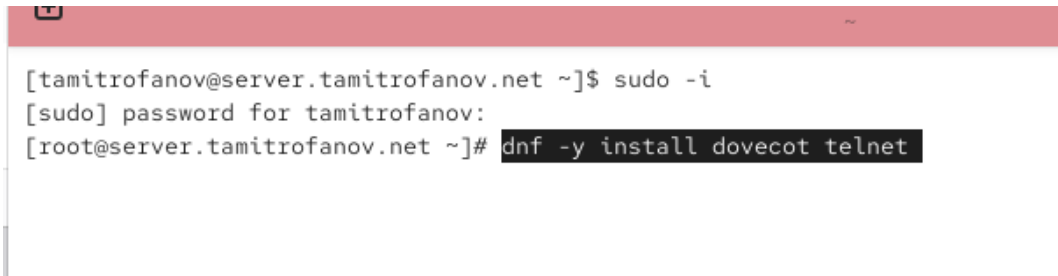
2.2 Задание

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 во внутреннем окружении виртуальной машины server, создайте скрипт для Vagrant, фиксирующий действия по установке Evolution во внутреннем окружении виртуальной машины client. Соответствующим образом внесите изменения в Vagrantfile.

Раздел 3

3. Выполнение лабораторной работы

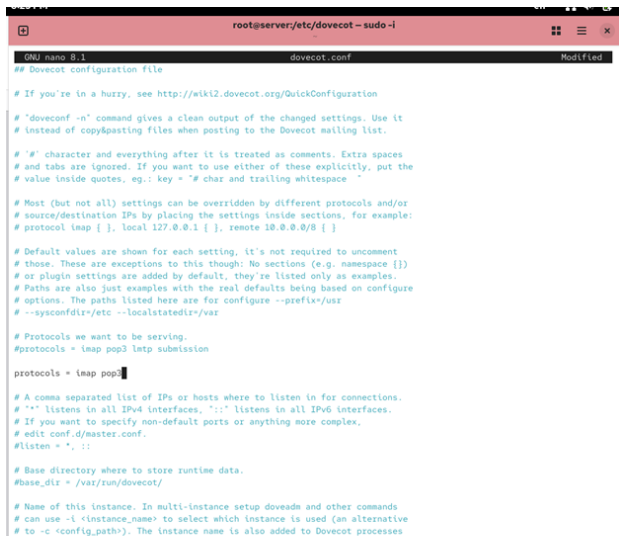
3.1 Установка Dovecot и Telnet на сервер



```
[tamtrofano@server.tamtrofano.net ~]$ sudo -i
[sudo] password for tamtrofano:
[root@server.tamtrofano.net ~]# dnf -y install dovecot telnet
```

Рисунок 1: Установка Dovecot и Telnet на сервере

3.2 Настройка поддерживаемых протоколов в dovecot.conf



```
root@server:/etc/dovecot - sudo -i
GNU nano 8.1 dovecot.conf Modified
## Dovecot configuration file

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

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

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

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

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

# Protocols we want to be serving.
#protocols = imap pop3 lmtp submission

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
# to -c <config_path>). The instance name is also added to Dovecot processes
```

3.3 Выбор механизмов аутентификации в 10-auth.conf

```
root@server:/etc/dovecot/conf.d - sudo -i
GNU nano 8.1 10-auth.conf
# ntlm_auth helper. <doc/wiki/Authentication/Mechanisms/Winbind.txt>
#auth_use_winbind = no

# 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

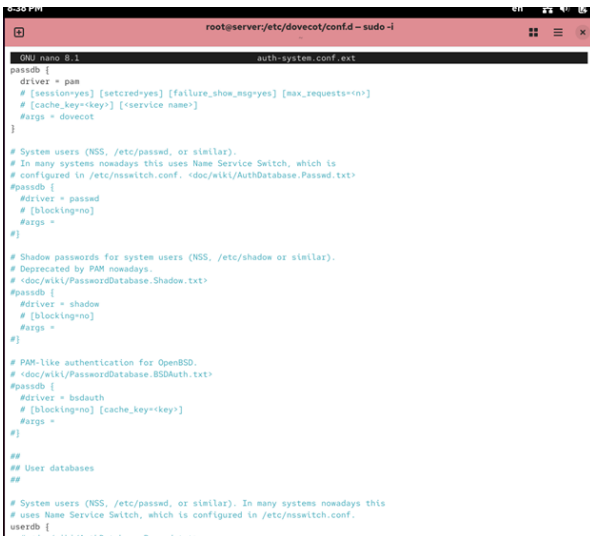
# Take the username from client's SSL certificate, using
# X509_NAME_get_text_by_NID() which returns the subject's DN's
# CommonName.
#auth_ssl_username_from_cert = no

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

##
## Password and user databases
##

#
# Password database is used to verify user's password (and nothing more).
# You can have multiple passwd and userdb. This is useful if you want to
# allow both system users (/etc/passwd) and virtual users to login without
# duplicating the system users into virtual database.
#
# <doc/wiki/PasswordDatabase.txt>
#
# User database specifies where mails are located and what user/group IDs
# own them. For single-UID configuration use "static" userdb.
#
# <doc/wiki/UserDatabase.txt>
```

3.4 Конфигурация драйверов passdb и userdb



```
root@server:/etc/dovecot/conf.d - sudo -i
GNU nano 0.1 auth-system.conf.ext
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 =
#}

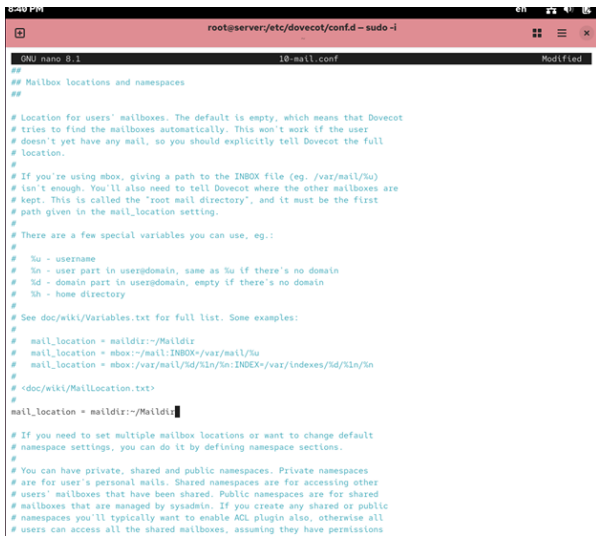
# Shadow passwords for system users (NSS, /etc/shadow or similar).
# Deprecated by PAM nowadays.
# <doc/wiki/PasswordDatabase.Shadow.txt>
#passdb {
#  #driver = shadow
#  # [blocking=no]
#  #args =
#}

# PAM-like authentication for OpenBSD.
# <doc/wiki/PasswordDatabase.BSDAuth.txt>
#passdb {
#  #driver = bsdauth
#  # [blocking=no] [cache_key=<key>]
#  #args =
#}

##
## User databases
##

# System users (NSS, /etc/passwd, or similar). In many systems nowadays this
# uses Name Service Switch, which is configured in /etc/nsswitch.conf.
userdb {
```


3.5 Определение пути к почтовым ящикам в 10-mail.conf



```
8:40 PM root@server:/etc/dovecot/conf.d - sudo -i
GNU nano 8.1 10-mail.conf Modified
##
## Mailbox locations and namespaces
##
# Location for users' mailboxes. The default is empty, which means that Dovecot
# tries to find the mailboxes automatically. This won't work if the user
# doesn't yet have any mail, so you should explicitly tell Dovecot the full
# location.
#
# If you're using mbox, giving a path to the INBOX file (eg. /var/mail/%u)
# isn't enough. You'll also need to tell Dovecot where the other mailboxes are
# kept. This is called the "root mail directory", and it must be the first
# path given in the mail_location setting.
#
# There are a few special variables you can use, eg.:
#
# %u - username
# %n - user part in user@domain, same as %u if there's no domain
# %d - domain part in user@domain, empty if there's no domain
# %h - home directory
#
# See doc/wiki/Variables.txt for full list. Some examples:
#
# mail_location = maildir:~/Maildir
# mail_location = mbox:~/mail:INBOX=/var/mail/%u
# mail_location = mbox:/var/mail/%d/%n/%n:INDEX=/var/indexes/%d/%n/%n
#
# <doc/wiki/MailLocation.txt>
mail_location = maildir:~/Maildir

# If you need to set multiple mailbox locations or want to change default
# namespace settings, you can do it by defining namespace sections.
#
# You can have private, shared and public namespaces. Private namespaces
# are for user's personal mails. Shared namespaces are for accessing other
# users' mailboxes that have been shared. Public namespaces are for shared
# mailboxes that are managed by sysadmin. If you create any shared or public
# namespaces you'll typically want to enable ACL plugin also, otherwise all
# users can access all the shared mailboxes, assuming they have permissions
```

3.6 Синхронизация Postfix с форматом Maildir

```
[root@server.tamitrofanov.net conf.d]#  
[root@server.tamitrofanov.net conf.d]#  
[root@server.tamitrofanov.net conf.d]# postconf -e 'home_mailbox = Maildir/'  
[root@server.tamitrofanov.net conf.d]# █
```

Рисунок 6: Синхронизация Postfix с форматом Maildir

3.7 Разрешение почтовых протоколов в брандмауэре



```
root@server:/etc/dovecot/conf.d – sudo -i

[root@server.tamitrofanov.net conf.d]# 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
```

Рисунок 7: Разрешение почтовых протоколов в брандмауэре

3.8 Запуск почтовых служб и настройка прав доступа

```
[root@server.tamitrofanov.net conf.d]#  
[root@server.tamitrofanov.net conf.d]#  
[root@server.tamitrofanov.net conf.d]# restorecon -vR /etc  
[root@server.tamitrofanov.net conf.d]# systemctl restart postfix  
systemctl enable dovecot  
systemctl start dovecot  
Created symlink '/etc/systemd/system/multi-user.target.wants/dovecot.service' → '/usr/lib/systemd/system/dovecot.serv  
ice'.  
[root@server.tamitrofanov.net conf.d]#  
[root@server.tamitrofanov.net conf.d]#
```

Рисунок 8: Запуск почтовых служб и настройка прав доступа

3.9 Просмотр логов запуска почтовой системы

```
[tamitrofanov@server.tamitrofanov.net ~]$ sudo tail -f /var/log/maillog
[sudo] password for tamitrofanov:
Oct 25 14:46:09 server postfix/master[11095]: reload -- version 3.8.5, configuration /etc/postfix
Oct 31 19:59:58 server postfix/postfix-script[1526]: starting the Postfix mail system
Oct 31 19:59:58 server postfix/master[1540]: daemon started -- version 3.8.5, configuration /etc/postfix
Oct 31 20:31:20 server postfix/postfix-script[1624]: starting the Postfix mail system
Oct 31 20:31:20 server postfix/master[1627]: daemon started -- version 3.8.5, configuration /etc/postfix
Oct 31 20:41:58 server postfix/postfix-script[5260]: stopping the Postfix mail system
Oct 31 20:41:58 server postfix/master[1627]: terminating on signal 15
Oct 31 20:41:58 server postfix/postfix-script[5338]: starting the Postfix mail system
Oct 31 20:41:58 server postfix/master[5340]: daemon started -- version 3.8.5, configuration /etc/postfix
Oct 31 20:41:59 server dovecot[5487]: master: Dovecot v2.3.21 (47349e2482) starting up for imap, pop3
```

Рисунок 9: Просмотр логов запуска почтовой системы

3.10 Проверка почтового ящика через консоль



```
root@server:/etc/dovecot/conf.d – sudo -i x

[root@server.tamitrofanov.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.tamitrofanov.net conf.d]#
```

Рисунок 10: Проверка почтового ящика через консоль

3.11 Просмотр списка почтовых папок через dovecadm

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

Рисунок 11: Просмотр списка почтовых папок через dovecadm

3.12 Установка почтового клиента Evolution на стороне клиента



A terminal window with a pink title bar. The title bar contains a plus icon on the left and the text 'root@client:~ – sudo -i' on the right. The terminal shows the following commands and output:

```
[tamitrofanov@client.tamitrofanov.net ~]$ sudo -i  
[sudo] password for tamitrofanov:  
[root@client.tamitrofanov.net ~]# dnf -y install evolution
```

Рисунок 12: Установка почтового клиента Evolution на стороне клиента

3.13 Настройка идентификационных данных пользователя

Cancel Back Identity Next

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

Please enter your name and email address below. The "optional" fields below do not need to be filled in, unless you wish to include this information in email you send.

Required Information

Full Name: tamitrofanov@tamitrofanov.net

Email Address: tamitrofanov@tamitrofanov.net

Optional Information

Reply-To:

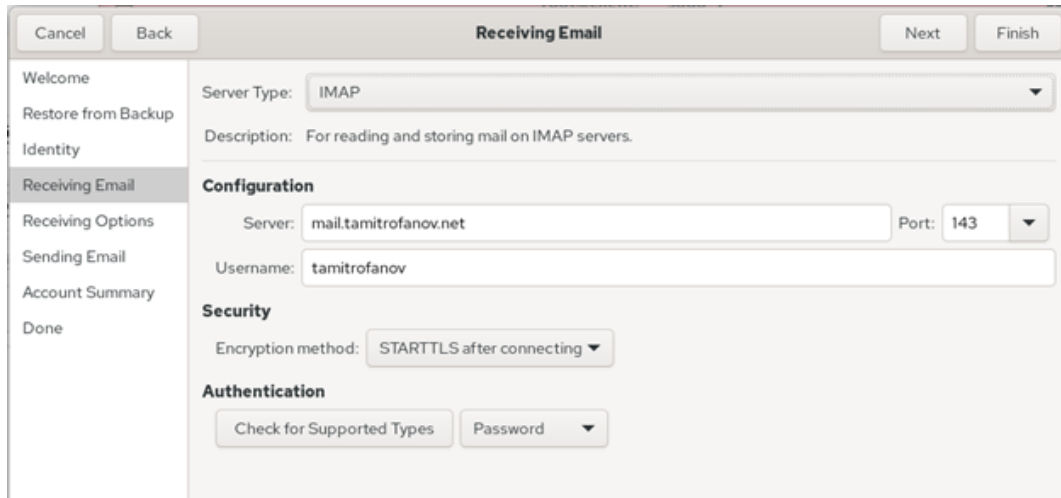
Organization:

Signature: None Add New Signature...

Aliases:

Add
Edit
Remove

3.14 Параметры подключения к серверу IMAP



The screenshot displays the 'Receiving Email' configuration window. On the left is a sidebar with navigation options: 'Welcome', 'Restore from Backup', 'Identity', 'Receiving Email' (selected), 'Receiving Options', 'Sending Email', 'Account Summary', and 'Done'. The main area is titled 'Receiving Email' and contains the following settings:

- Server Type:** A dropdown menu set to 'IMAP'.
- Description:** 'For reading and storing mail on IMAP servers.'
- Configuration:**
 - Server:** 'mail.tamitrofanov.net'
 - Port:** '143' with a dropdown arrow.
 - Username:** 'tamitrofanov'
- Security:**
 - Encryption method:** 'STARTTLS after connecting' with a dropdown arrow.
- Authentication:**
 - Check for Supported Types:** A button.
 - Password:** A dropdown menu.

At the top of the window are buttons for 'Cancel', 'Back', 'Next', and 'Finish'.

3.15 Настройка параметров отправки почты по SMTP

Cancel Back **Sending Email** Next Finish

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.tamitrofanov.net Port: 25

☐ Server requires authentication

Security

Encryption method: STARTTLS after connecting

Authentication

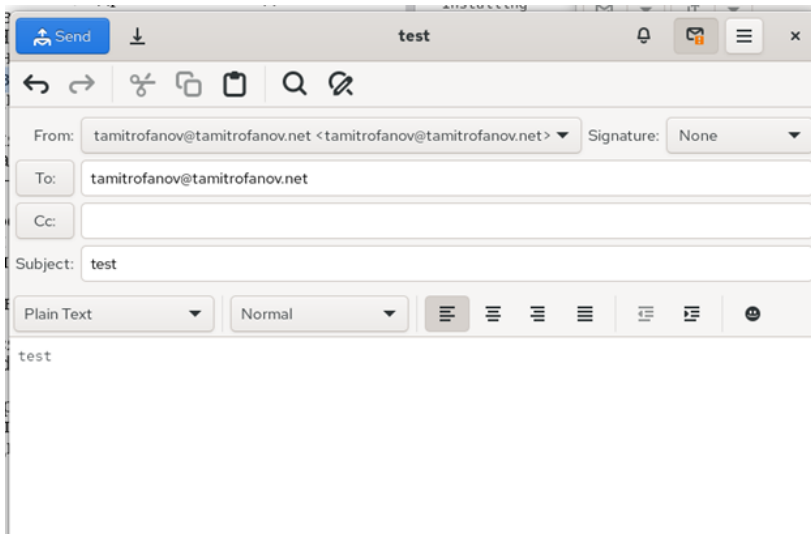
Type: Check for Supported Types PLAIN

Username: root

Send Options

☐ Re-encode message before send

3.16 Создание и отправка тестового письма



3.17 Верификация доставки почты через логи сервера

The left screenshot shows an email client window (Thunderbird) with a list of sent emails. The right screenshot shows a terminal window displaying mail log output.

Left Screenshot (Email Client):

- Window title: Nov 8 4:17 PM
- Address bar: root@client:~ - ssh - 4
- Menu bar: File, Edit, View, Tools, Window, Help
- Toolbar: New, Send/Receive, Sent, Reply, Group Reply, Forward
- Search bar: Search Subject or Address
- Left sidebar: On This Computer (Inbox, Drafts, Junk, Outbox, Sent, Templates, Trash, News and Blogs), tamtrofanov@tamtrofanov... (Inbox, Junk, Trash), Mail (Contacts, Calendar, Tasks, Memoes)
- Main pane: List of sent emails. The selected email is:

| To | Subject | Date |
|----------------------------|---------|-------------|
| tamtrofanov@tamtrofanov... | test | Sat 16:26 |
| tamtrofanov@tamtrofanov... | test2 | Today 16:16 |
- Bottom pane: Details for the selected email.

From: tamtrofanov@tamtrofanov.net <tamtrofanov@tamtrofanov.net>
 To: tamtrofanov@tamtrofanov.net
 Subject: test
 Date: Sat, 08 Nov 2025 16:26:04 +0000

Right Screenshot (Terminal):

- Window title: Nov 8 4:17 PM
- Address bar: root@server:~ - ssh - 4
- Terminal output:

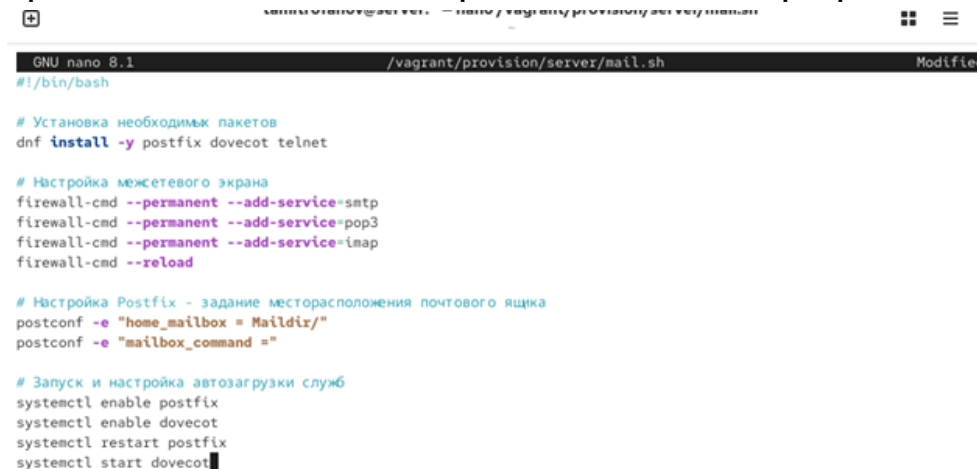

```
[tamtrofanov@server tamtrofanov.net ~]$ sudo -i
[sudo] password for tamtrofanov:
[root@server tamtrofanov.net ~]# tail -f /var/log/maillog
Nov 8 16:14:13 server dovecot[1442]: master: Reopening: Time moved forwards by 506048.475007 seconds - adjusting timeo
v3.1.
Nov 8 16:14:13 server postfix/smtpd[21950]: connect from client.tamtrofanov.net[192.168.1.30]
Nov 8 16:14:13 server postfix/smtpd[21950]: 795A4218E288: client=client.tamtrofanov.net[192.168.1.30]
Nov 8 16:14:13 server postfix/cleanup[21964]: 795A4218E288: message=6d+cc71a2c12166097f6538353eeb4a4a5c7e48337.cam
e1gtamtrofanov.net+
Nov 8 16:14:13 server postfix/qmgr[1682]: 795A4218E288: from=tamtrofanov@tamtrofanov.net, size=718, nrcpt=1 (que
ue active)
Nov 8 16:14:13 server postfix/local[21965]: 795A4218E288: to=tamtrofanov@tamtrofanov.net, relay=local, delay=0.0
4, delays=0.02/0.01/0/0, dsn=2.0.0, status=sent (delivered to maildir)
Nov 8 16:14:13 server postfix/qmgr[1682]: 795A4218E288: removed
Nov 8 16:14:13 server postfix/smtpd[21950]: disconnect from client.tamtrofanov.net[192.168.1.30] ehlo=1 nati=1 rcpt
=1 data=1 quit=1 commands=5
Nov 8 16:14:37 server dovecot[1543]: imap-login: Login: user=tamtrofanov, method=PLAIN, cip=192.168.1.30, lip=192
.168.1.1, npid=22802, TLS, session=PLg3b6D9GAgKa+
Nov 8 16:14:40 server dovecot[1543]: imap-login: Login: user=tamtrofanov, method=PLAIN, cip=192.168.1.30, lip=192
.168.1.1, npid=22808, TLS, session=ta3pbd09MgKa+
Nov 8 16:16:30 server postfix/smtpd[22258]: connect from client.tamtrofanov.net[192.168.1.30]
Nov 8 16:16:30 server postfix/smtpd[22258]: 96346218E288: client=client.tamtrofanov.net[192.168.1.30]
Nov 8 16:16:30 server postfix/cleanup[22252]: 96346218E288: message=6d+ada37a588b0515e4b8f9e0b135a0be87821.cam
e1gtamtrofanov.net+
Nov 8 16:16:30 server postfix/qmgr[1682]: 96346218E288: from=tamtrofanov@tamtrofanov.net, size=600, nrcpt=1 (que
ue active)
Nov 8 16:16:30 server postfix/smtpd[22258]: disconnect from client.tamtrofanov.net[192.168.1.30] ehlo=1 nati=1 rcpt
=1 data=1 quit=1 commands=5
Nov 8 16:16:30 server postfix/local[22262]: 96346218E288: to=tamtrofanov@tamtrofanov.net, relay=local, delay=0.0
5, delays=0.01/0.01/0/0, dsn=2.0.0, status=sent (delivered to maildir)
Nov 8 16:16:30 server postfix/qmgr[1682]: 96346218E288: removed
```

3.18 Тестирование протокола POP3 через telnet

```
[root@server.tamitrofanov.net ~]# telnet mail.tamitrofanov.net 110
Trying 192.168.1.1...
Connected to mail.tamitrofanov.net.
Escape character is '^]'.
+OK Dovecot ready.
user tamitrofanov
+OK
pass 123456
+OK Logged in.
list
+OK 2 messages:
1 855
2 737
.
retr 1
+OK 855 octets
Return-Path: <tamitrofanov@tamitrofanov.net>
X-Original-To: tamitrofanov@tamitrofanov.net
Delivered-To: tamitrofanov@tamitrofanov.net
Received: from client.tamitrofanov.net (client.tamitrofanov.net [192.168.1.30])
        by server.tamitrofanov.net (Postfix) with ESMTP id 755A4218E28B
        for <tamitrofanov@tamitrofanov.net>; Sat,  8 Nov 2025 16:14:13 +0000 (UTC)
Message-ID: <c71d2c1216619716530353eeb4a4c4a5c7c48337.camel@tamitrofanov.net>
Subject: test
From: "tamitrofanov@tamitrofanov.net" <tamitrofanov@tamitrofanov.net>
To: tamitrofanov@tamitrofanov.net
X-Priority: 1
Content-Type: text/plain; charset="UTF-8"
Content-Transfer-Encoding: quoted-printable
MIME-Version: 1.0
Date: Sat, 01 Nov 2025 16:26:04 +0000
User-Agent: Evolution 3.52.4 (3.52.4-2.el10_0)

test
--=20
tamitrofanov@tamitrofanov.net <tamitrofanov@tamitrofanov.net>
```

3.19 Скрипт автоматизации настройки почтового сервера



```
GNU nano 8.1 /vagrant/provision/server/mail.sh Modified
#!/bin/bash

# Установка необходимых пакетов
dnf install -y postfix dovecot telnet

# Настройка межсетевого экрана
firewall-cmd --permanent --add-service=smtp
firewall-cmd --permanent --add-service=pop3
firewall-cmd --permanent --add-service=imap
firewall-cmd --reload

# Настройка Postfix - задание месторасположения почтового ящика
postconf -e "home_mailbox = Maildir/"
postconf -e "mailbox_command ="

# Запуск и настройка автозагрузки служб
systemctl enable postfix
systemctl enable dovecot
systemctl restart postfix
systemctl start dovecot
```

3.20 Скрипт автоматизации настройки клиентской машины



The screenshot shows a terminal window titled "root@client:/vagrant/provision/client - sudo -i". The terminal displays the contents of a file named "mail.sh" using the GNU nano 8.1 editor. The script is a bash script that performs the following actions:

```
#!/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
```

The terminal window also shows the file name "mail.sh" and the status "Modified" in the top right corner. The bottom of the window shows the user "tametrofanov@client:~".

Раздел 4

4. Заключение

4.1 Вывод

В ходе выполнения лабораторной работы я приобрёл практические навыки по установке и простейшему конфигурированию POP3/IMAP-сервера.