

Настройка POP3/IMAP сервера

Лабораторная работа №9

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Цель и задачи работы

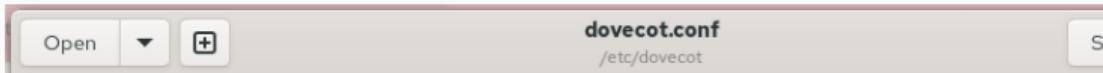
Цель лабораторной работы

Приобретение практических навыков установки и базовой настройки почтового сервера с поддержкой протоколов POP3 и IMAP.

Выполнение работы

Настройка поддерживаемых протоколов

В конфигурационном файле Dovecot задан список используемых почтовых протоколов — IMAP и POP3.



```
Open      dovecot.conf      Save
+          /etc/dovecot

1 ## Dovecot configuration file
2
3 # If you're in a hurry, see http://wiki2.dovecot.org/QuickConfiguration
4
5 # "doveconf -n" command gives a clean output of the changed settings. Use it
6 # instead of copy&pasting files when posting to the Dovecot mailing list.
7
8 # '#' character and everything after it is treated as comments. Extra spaces
9 # and tabs are ignored. If you want to use either of these explicitly, put the
10 # value inside quotes, eg.: key = "# char and trailing whitespace"
11
12 # Most (but not all) settings can be overridden by different protocols and/or
13 # source/destination IPs by placing the settings inside sections, for example:
14 # protocol imap { }, local 127.0.0.1 { }, remote 10.0.0.0/8 { }
15
16 # Default values are shown for each setting, it's not required to uncomment
17 # those. These are exceptions to this though: No sections (e.g. namespace {})
18 # or plugin settings are added by default, they're listed only as examples.
19 # Paths are also just examples with the real defaults being based on configure
20 # options. The paths listed here are for configure --prefix=/usr
21 # --sysconfdir=/etc --localstatedir=/var
22
23 # Protocols we want to be serving.
24
25 protocols = imap pop3 |
```

Настройка аутентификации пользователей

В конфигурации Dovecot выбран механизм аутентификации plain, обеспечивающий работу с системной базой пользователей.

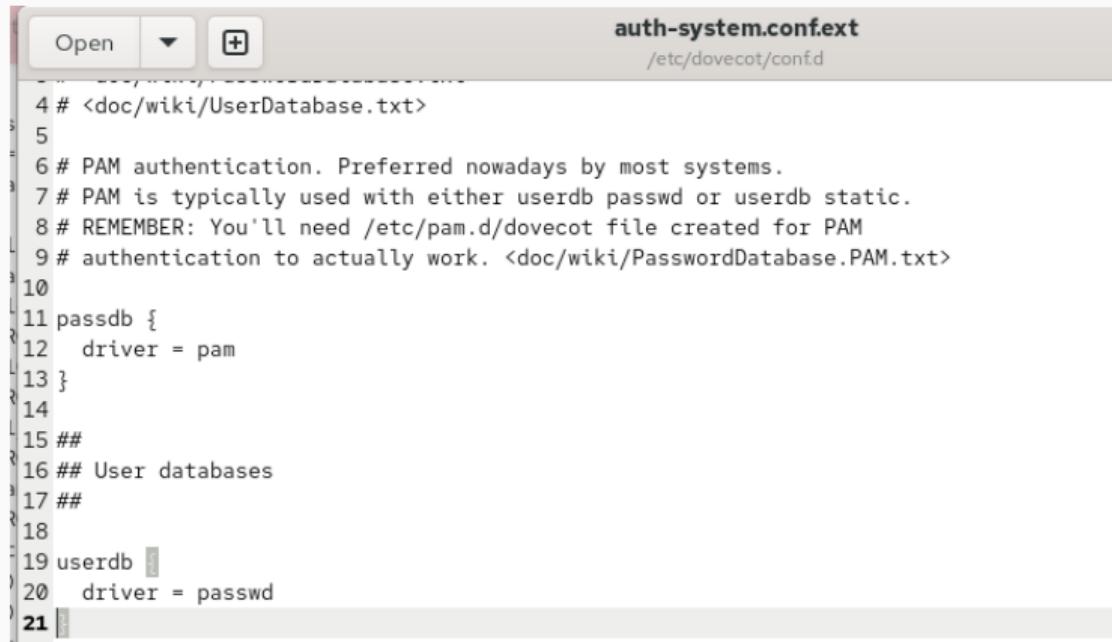


```
Open 10-auth.conf /etc/dovecot/conf.d Save Help  
86 #auth_failure_delay = 2 secs  
87  
88 # Require a valid SSL client certificate or the authentication fails.  
89 #auth_ssl_require_client_cert = no  
90  
91 # Take the username from client's SSL certificate, using  
# X509_NAME_get_text_by_NID() which returns the subject's DN's  
93 # CommonName.  
94 #auth_ssl_username_from_cert = no  
95  
96 # Space separated list of wanted authentication mechanisms:  
97 #   plain login digest-md5 cram-md5 ntlm rpa apop anonymous gssapi otp  
98 #   gss-spnego  
99 # NOTE: See also disable_plaintext_auth setting.  
100 auth_mechanisms = plain  
101
```

Рис. 2: Настройка аутентификации

Источники учётных данных

Для аутентификации используется PAM, а информация о пользователях извлекается из системного файла `passwd`.



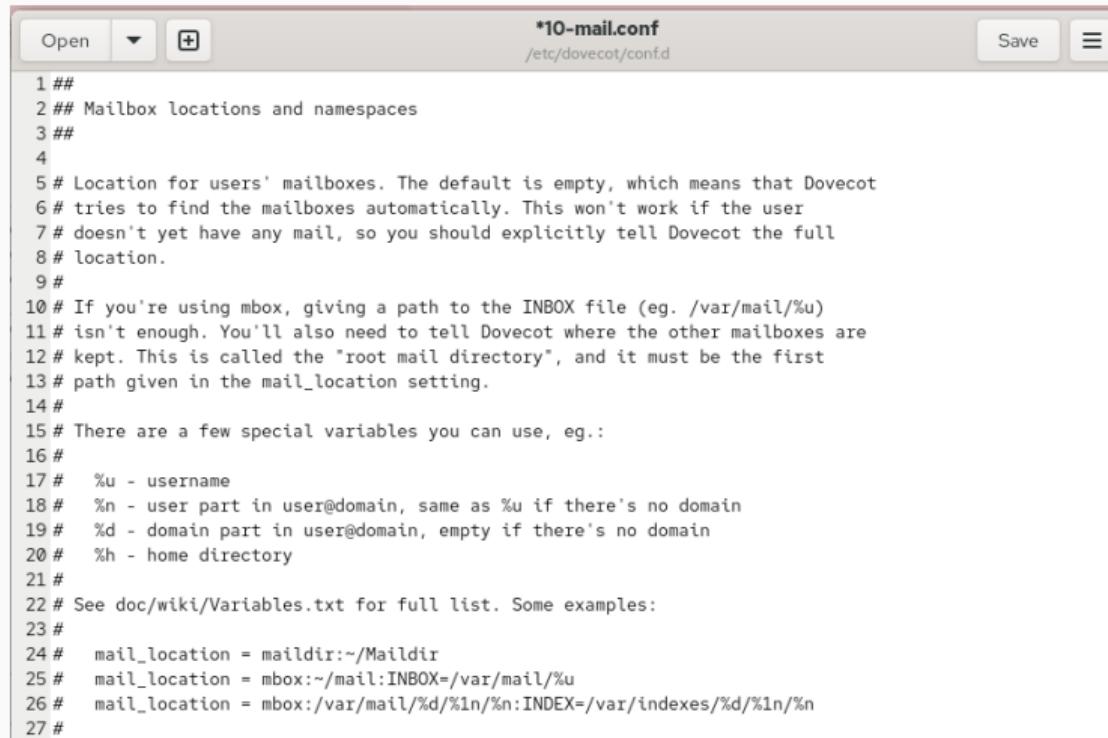
The screenshot shows a text editor window with the title bar "auth-system.conf.ext" and the path "/etc/dovecot/conf.d". The editor has three buttons: "Open", a dropdown arrow, and a plus sign. The main area contains the following configuration code:

```
4 # <doc/wiki/UserDatabase.txt>
5
6 # PAM authentication. Preferred nowadays by most systems.
7 # PAM is typically used with either userdb passwd or userdb static.
8 # REMEMBER: You'll need /etc/pam.d/dovecot file created for PAM
9 # authentication to actually work. <doc/wiki/PasswordDatabase.PAM.txt>
10
11 passdb {
12   driver = pam
13 }
14
15 ##
16 ## User databases
17 ##
18
19 userdb
20   driver = passwd
21
```

Рис. 3: Источники аутентификации

Настройка почтовых ящиков

В качестве формата хранения почты выбран Maildir, размещаемый в домашнем каталоге пользователя.



The screenshot shows a text editor window with the title bar "10-mail.conf" and the path "/etc/dovecot/conf.d". The editor has standard buttons for Open, Save, and a menu icon. The main area contains a configuration file with the following content:

```
1 ##
2 ## Mailbox locations and namespaces
3 ##
4
5 # Location for users' mailboxes. The default is empty, which means that Dovecot
6 # tries to find the mailboxes automatically. This won't work if the user
7 # doesn't yet have any mail, so you should explicitly tell Dovecot the full
8 # location.
9 #
10 # If you're using mbox, giving a path to the INBOX file (eg. /var/mail/%u)
11 # isn't enough. You'll also need to tell Dovecot where the other mailboxes are
12 # kept. This is called the "root mail directory", and it must be the first
13 # path given in the mail_location setting.
14 #
15 # There are a few special variables you can use, eg.:
16 #
17 # %u - username
18 # %n - user part in user@domain, same as %u if there's no domain
19 # %d - domain part in user@domain, empty if there's no domain
20 # %h - home directory
21 #
22 # See doc/wiki/Variables.txt for full list. Some examples:
23 #
24 # mail_location = maildir:~/Maildir
25 # mail_location = mbox:~/mail:INBOX=/var/mail/%u
26 # mail_location = mbox:/var/mail/%d/%1n/%n:INDEX=/var/indexes/%d/%1n/%n
27 #
```

Настройка межсетевого экрана

В межсетевом экране разрешена работа сервисов POP3, POP3S, IMAP и IMAPS.

```
[root@server.elsaiedadel.net server]# postconf -e 'home_mailbox = Maildir/'  
[root@server.elsaiedadel.net server]# firewall-cmd --add-service=pop3 --permanent  
success  
[root@server.elsaiedadel.net server]# firewall-cmd --add-service=pop3s --permanent  
success  
[root@server.elsaiedadel.net server]# firewall-cmd --add-service=imap --permanent  
success  
[root@server.elsaiedadel.net server]# firewall-cmd --add-service=imaps --permanent  
success  
[root@server.elsaiedadel.net server]# firewall-cmd --reload  
success  
[root@server.elsaiedadel.net server]# firewall-cmd --list-services  
cockpit dhcp dhcpcv6-client dns http https imap imaps pop3 pop3s smtp ssh ssh-custom  
[root@server.elsaiedadel.net server]# restorecon -vR /etc  
[root@server.elsaiedadel.net server]# systemctl restart postfix  
[root@server.elsaiedadel.net server]# systemctl enable dovecot  
Created symlink '/etc/systemd/system/multi-user.target.wants/dovecot.service' → '/usr/lib/systemd/system/dovecot.service'.  
[root@server.elsaiedadel.net server]# systemctl start dovecot  
[root@server.elsaiedadel.net server]#
```

Рис. 5: Настройка firewall

Мониторинг работы почтовых служб

В процессе тестирования выполнялся мониторинг логов почтовых служб Postfix и Dovecot.

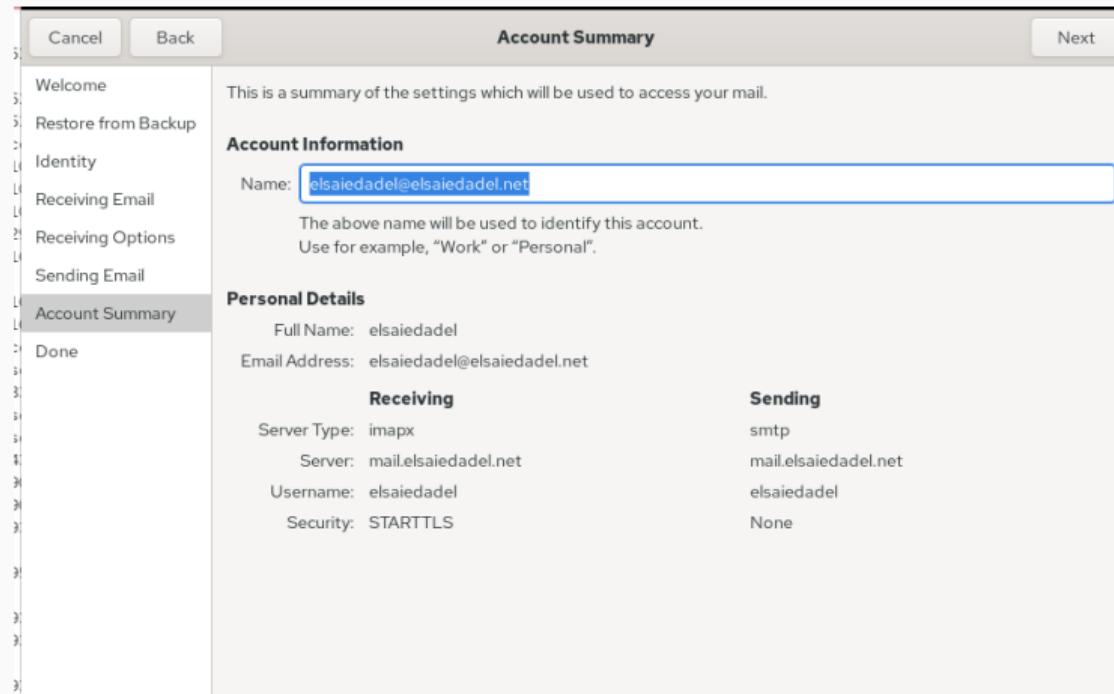


Рис. 6: Мониторинг maillog

Проверка доставки почты на сервере

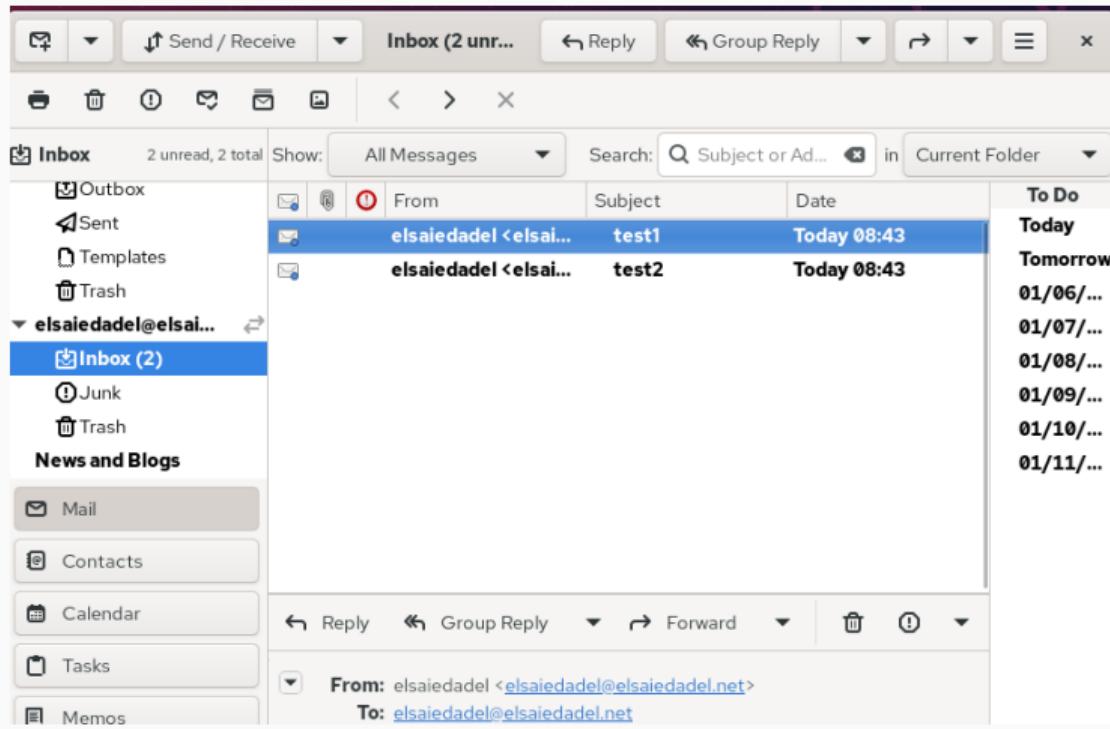
Просмотр содержимого Maildir подтвердил успешную доставку тестовых писем локальному пользователю.

```
Jan  4 08:43:15 server postfix/smtpd[25330]: warning: run-time library vs. compile-time header version mismatch: OpenSSL 3.5.0 may not be compatible with OpenSSL 3.2.0
Jan  4 08:43:15 server postfix/smtpd[25330]: connect from client.elsaiedadel.net[192.168.1.30]
Jan  4 08:43:15 server postfix/smtpd[25330]: ACEE922AC2AE: client=client.elsaiedadel.net[192.168.1.30]
Jan  4 08:43:15 server postfix/cleanup[25332]: ACEE922AC2AE: message-id=<55ceebe69c9d1b138cc66c2a6447d443529bc6df.camel@elsaiedadel.net>
Jan  4 08:43:15 server postfix/qmgr[24390]: ACEE922AC2AE: from=<elsaiedadel@elsaiedadel.net>, size=569, nrcpt=1 (queue active)
Jan  4 08:43:15 server postfix/smtpd[25330]: disconnect from client.elsaiedadel.net[192.168.1.30] ehlo=1 mail=1 rcpt=1 data=1 quit=1 commands=5
Jan  4 08:43:15 server postfix/local[25333]: ACEE922AC2AE: to=<elsaiedadel@elsaiedadel.net>, relay=local, delay=0.01, delays=0/0/0/0, dsn=2.0.0, status=sent (delivered to maildir)
Jan  4 08:43:15 server postfix/qmgr[24390]: ACEE922AC2AE: removed
```

Рис. 7: Просмотр Maildir

Использование doveadm

Попытка работы с утилитой doveadm без прав суперпользователя завершилась ошибкой доступа, что подтверждает корректное разграничение прав.



Настройка почтового клиента

На виртуальной машине Client установлен и настроен почтовый клиент Evolution для работы с IMAP и SMTP.

```
[elsaiedadel@server.elsaiedadel.net named]$  
[elsaiedadel@server.elsaiedadel.net named]$ MAIL=~/Maildir/ mail  
s-nail version v14.9.24. Type `?' for help  
/home/elsaiedadel/Maildir: 2 messages 2 unread  
►U 1 elsaiedadel 2026-01-04 08:43 18/684 "test1"  
U 2 elsaiedadel 2026-01-04 08:43 18/684 "test2"  
& q  
Held 2 messages in /home/elsaiedadel/Maildir  
[elsaiedadel@server.elsaiedadel.net named]$ doveadm mailbox list  
Error: net_connect_unix(/run/dovecot/stats-writer) failed: Permission denied  
INBOX  
[elsaiedadel@server.elsaiedadel.net named]$ doveadm mailbox list -u elsaiedadel  
Error: net_connect_unix(/run/dovecot/stats-writer) failed: Permission denied  
INBOX  
[elsaiedadel@server.elsaiedadel.net named]$ █
```

Рис. 9: Настройка Evolution

Получение тестовых сообщений

Отправленные тестовые письма успешно доставлены и отображены в папке «Входящие».

```
[elsaiedadel@server.elsaiedadel.net named]# [elsaiedadel@server.elsaiedadel.net named]$ telnet mail.elsaiedadel.net
Trying 192.168.1.1...
telnet: connect to address 192.168.1.1: Connection refused
[elsaiedadel@server.elsaiedadel.net named]$ telnet mail.elsaiedadel.net 110
Trying 192.168.1.1...
Connected to mail.elsaiedadel.net.
Escape character is '^>'.
+OK Dovecot ready.
user elsaiedadel
+OK
pass 123456
+OK Logged in.
list
+OK 2 messages:
1 700
2 700
.
retr 1
+OK 700 octets
Return-Path: <elsaiedadel@elsaiedadel.net>
X-Original-To: elsaiedadel@elsaiedadel.net
Delivered-To: elsaiedadel@elsaiedadel.net
Received: from client.elsaiedadel.net (client.elsaiedadel.net [192.168.1.30])
        by server.elsaiedadel.net (Postfix) with ESMTP id ACEE922AC2AE
        for <elsaiedadel@elsaiedadel.net>; Sun, 4 Jan 2026 08:43:15 +0000 (UTC)
Message-ID: <55ceebe69c9d1b138cc66c2a6447d443529bc6df.camel@elsaiedadel.net>
Subject: test1
From: elsaiedadel <elsaiedadel@elsaiedadel.net>
To: elsaiedadel@elsaiedadel.net
Date: Sun, 04 Jan 2026 08:43:15 +0000
Content-Type: text/plain
Content-Transfer-Encoding: 7bit
User-Agent: Evolution 3.52.4 (3.52.4-2.el10_1)
MTIME-Version: 1.0
```

Проверка POP3 через Telnet

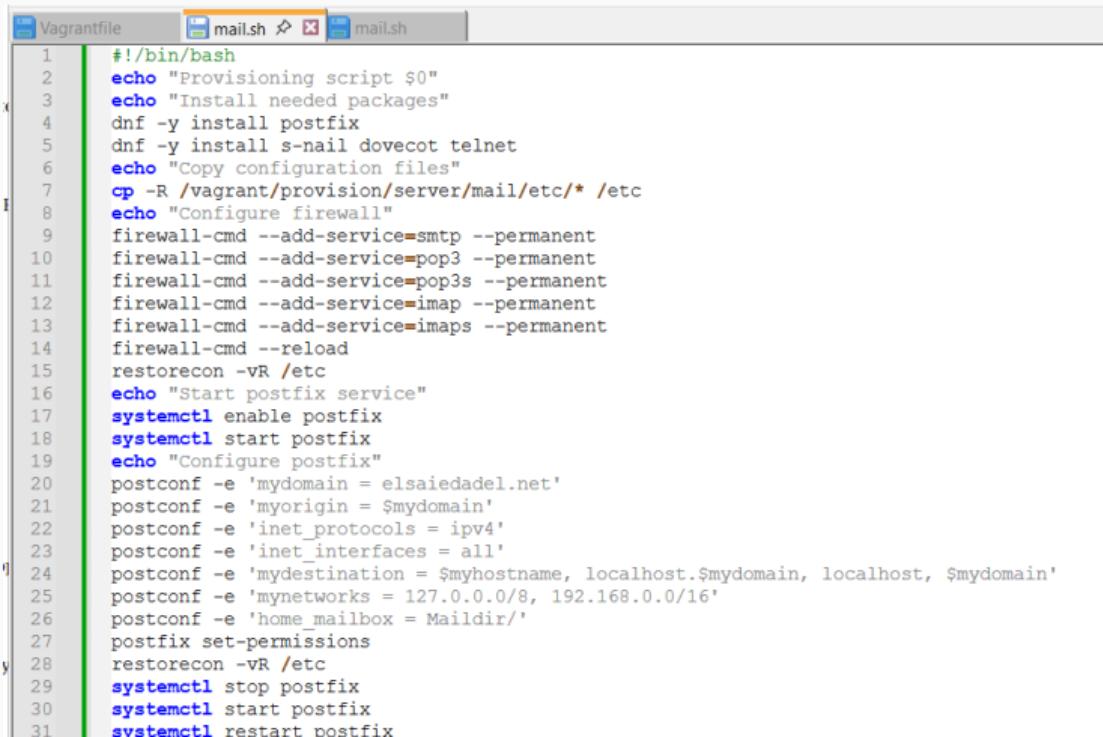
Работа протокола POP3 проверена с использованием Telnet: выполнен вход, просмотр и удаление писем.

```
[root@server.elsaiedadel.net server]# cd /vagrant/provision/server/
[root@server.elsaiedadel.net server]# mkdir -p /vagrant/provision/server/mail/etc/dovecot/conf.d
[root@server.elsaiedadel.net server]# cp -R /etc/dovecot/dovecot.conf /vagrant/provision/server/mail/etc/dovecot/
[root@server.elsaiedadel.net server]# cp -R /etc/dovecot/conf.d/10-auth.conf /vagrant/provision/server/mail/etc/dovecot/conf.d/
[root@server.elsaiedadel.net server]# cp -R /etc/dovecot/auth-system.conf.ext /vagrant/provision/server/mail/etc/dovecot/conf.d/
[root@server.elsaiedadel.net server]# cp -R /etc/dovecot/conf.d/auth-system.conf.ext /vagrant/provision/server/mail/etc/dovecot/conf.d/
[root@server.elsaiedadel.net server]# cp -R /etc/dovecot/conf.d/10-mail.conf /vagrant/provision/server/mail/etc/dovecot/conf.d/
[root@server.elsaiedadel.net server]#
```

Рис. 11: POP3 через Telnet

Копирование конфигурационных файлов

Конфигурационные файлы Dovecot сохранены в каталог provisioning для последующей автоматизации развёртывания.

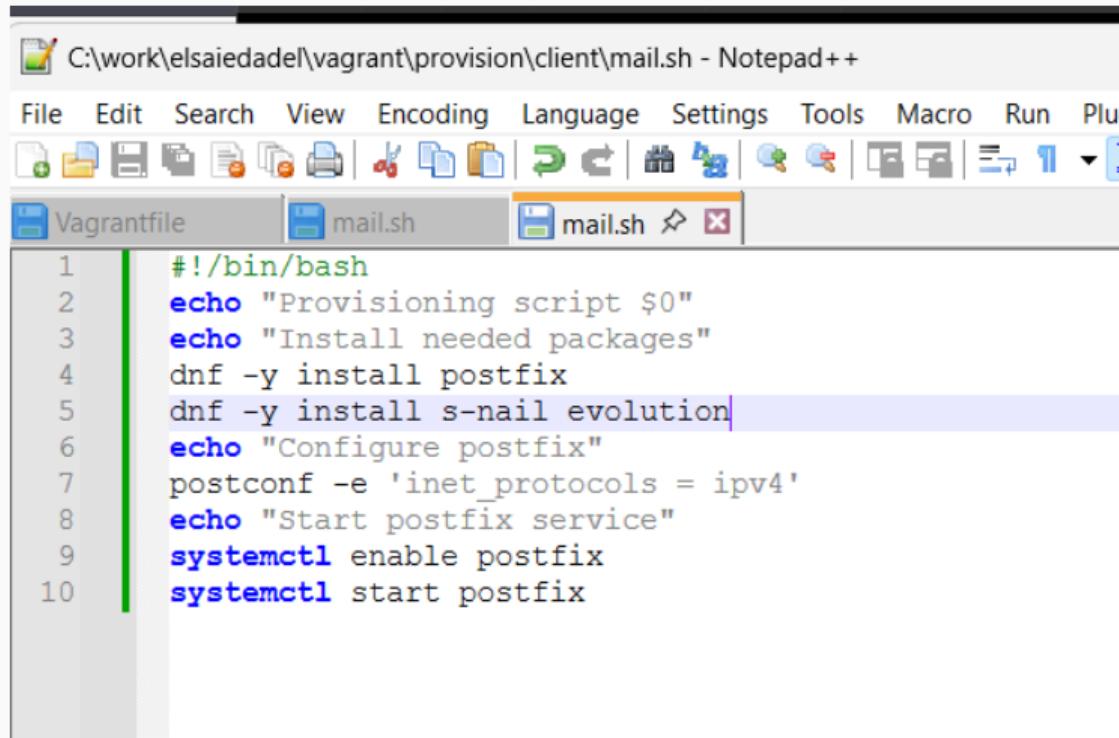


The screenshot shows a terminal window with two tabs: "Vagrantfile" and "mail.sh". The "mail.sh" tab is active and displays a bash provisioning script. The script performs several tasks: it installs postfix, s-mail, dovecot, and telnet packages; copies configuration files from the Vagrant provisioning directory to /etc; configures the firewall to allow smtp, pop3, pop3s, imap, and imaps services; reloads the firewall; starts the postfix service; enables it; starts it; configures postfix with specific parameters like mydomain, myorigin, and inet_protocols; sets postconf options for mydestination, mynetworks, and home_mailbox; runs postfix set-permissions; stops postfix; starts it again; and finally restarts it. The script uses echo commands to log its actions.

```
#!/bin/bash
echo "Provisioning script $0"
echo "Install needed packages"
dnf -y install postfix
dnf -y install s-mail 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 --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
restorecon -vR /etc
echo "Start postfix service"
systemctl enable postfix
systemctl start postfix
echo "Configure postfix"
postconf -e 'mydomain = elsaiedadel.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 restart postfix
```

Provisioning-скрипты

В provisioning-скрипты добавлены действия по установке, настройке и запуску почтовых служб на сервере и клиенте.



The screenshot shows a Notepad++ window with the title bar "C:\work\elsaiedadel\vagrant\provision\client\mail.sh - Notepad++". The menu bar includes File, Edit, Search, View, Encoding, Language, Settings, Tools, Macro, Run, Plugins, and Help. Below the menu is a toolbar with various icons. The tabs at the bottom show "Vagrantfile", "mail.sh", and another "mail.sh" tab which is currently active. The code in the editor is:

```
1 #!/bin/bash
2 echo "Provisioning script $0"
3 echo "Install needed packages"
4 dnf -y install postfix
5 dnf -y install s-nail evolution
6 echo "Configure postfix"
7 postconf -e 'inet_protocols = ipv4'
8 echo "Start postfix service"
9 systemctl enable postfix
10 systemctl start postfix
```

Выводы

Вывод

В ходе лабораторной работы был настроен и протестирован почтовый сервер на базе Postfix и Dovecot. Обеспечена доставка и получение электронной почты по протоколам SMTP, IMAP и POP3. Проверена работа почтовых клиентов и автоматизирована настройка почтовой подсистемы с использованием provisioning-скриптов.