

Лабораторная работа

Номер 8

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Приобретение практических навыков по установке и конфигурированию SMTP-сервера

```
[root@server.dnnoharov.net ~]# dnf -y install postfix
Extra Packages for Enterprise Linux 10 5.1 kB/s | 38 kB 00:07
Extra Packages for Enterprise Linux 10 2.6 MB/s | 5.6 MB 00:02
Rocky Linux 10 - BaseOS 175 B/s | 4.3 kB 00:25
Rocky Linux 10 - AppStream 14 kB/s | 4.3 kB 00:00
Rocky Linux 10 - CRB 14 kB/s | 4.3 kB 00:00
Rocky Linux 10 - Extras 3.9 kB/s | 3.1 kB 00:00
Dependencies resolved.
=====
Package Arch Version Repository Size
=====
Installing:
postfix x86_64 2:3.8.5-8.el10 appstream 1.5 M
Installing dependencies:
postfix-lmdb x86_64 2:3.8.5-8.el10 appstream 25 k
Transaction Summary
=====
Install 2 Packages

Total download size: 1.5 M
Installed size: 4.5 M
Downloading Packages:
(1/2): postfix-lmdb-3.8.5-8.el10.x86_64 30 kB/s | 25 kB 00:00
(2/2): postfix-3.8.5-8.el10.x86_64.rpm 1.7 MB/s | 1.5 MB 00:00
-----
Total 957 kB/s | 1.5 MB 00:01
Running transaction check
Transaction check succeeded.
Running transaction test
Transaction test succeeded.
Running transaction
Preparing : 1/1
Installing : postfix-lmdb-2:3.8.5-8.el10.x86_64 1/2
Running scriptlet: postfix-2:3.8.5-8.el10.x86_64 2/2
Installing : postfix-2:3.8.5-8.el10.x86_64 2/2
Running scriptlet: postfix-2:3.8.5-8.el10.x86_64 2/2

Installed:
postfix-2:3.8.5-8.el10.x86_64 postfix-lmdb-2:3.8.5-8.el10.x86_64
```

Рис. 1: Установка Postfix

```
[root@server.dmmosharov.net ~]# dnf -y install s-nail
Last metadata expiration check: 0:00:54 ago on Thu 29 Jan 2026 08:16:13
PM UTC.
Dependencies resolved.
=====
Package      Architecture Version      Repository    Size
=====
Installing:
s-nail       x86_64       14.9.24-12.el10  appstream    633 k

Transaction Summary
=====
Install 1 Package

Total download size: 633 k
Installed size: 1.2 M
Downloading Packages:
s-nail-14.9.24-12.el10.x86_64.rpm    105 kB/s | 633 kB    00:06
-----
Total                                73 kB/s | 633 kB    00:08

Running transaction check
Transaction check succeeded.
Running transaction test
Transaction test succeeded.
Running transaction
  Preparing      :                                1/1
  Running scriptlet: s-nail-14.9.24-12.el10.x86_64 1/1
  Installing      : s-nail-14.9.24-12.el10.x86_64 1/1
  Running scriptlet: s-nail-14.9.24-12.el10.x86_64 1/1

Installed:
s-nail-14.9.24-12.el10.x86_64

Complete!
[root@server.dmmosharov.net ~]#
```

Рис. 2: Установка s-nail

Предварительная настройка

```
[root@server.dmmosharov.net ~]# firewall-cmd --add-service=smtp
success
[root@server.dmmosharov.net ~]# firewall-cmd --add-service=smtp --perma
nent
success
[root@server.dmmosharov.net ~]# firewall-cmd --list-services
cockpit dhcp dhcpv6-client dns http https smtp ssh ssh-custom
[root@server.dmmosharov.net ~]# restorecon -vR /etc
[root@server.dmmosharov.net ~]# systemctl enable postfix
Created symlink '/etc/systemd/system/multi-user.target.wants/postfix.se
rvice' → '/usr/lib/systemd/system/postfix.service'.
[root@server.dmmosharov.net ~]# systemctl start postfix
[root@server.dmmosharov.net ~]# █
```

Рис. 3: Предварительная настройка

```
[root@server.dmoosharov.net ~]# postconf
2bounce_notice_recipient = postmaster
access_map_defer_code = 450
access_map_reject_code = 554
address_verify_cache_cleanup_interval = 12h
address_verify_default_transport = $default_transport
address_verify_local_transport = $local_transport
address_verify_map = btree:$data_directory/verify.cache
address_verify_negative_cache = yes
address_verify_negative_expire_time = 3d
address_verify_negative_refresh_time = 3h
address_verify_pending_request_limit = 5000
address_verify_poll_count = ${stress?{1}:{3}}
address_verify_poll_delay = 3s
address_verify_positive_expire_time = 31d
address_verify_positive_refresh_time = 7d
address_verify_relay_transport = $relay_transport
address_verify_relayhost = $relayhost
address_verify_sender = $double_bounce_sender
address_verify_sender_dependent_default_transport_maps = $sender_dependent_default_transport_maps
address_verify_sender_dependent_relayhost_maps = $sender_dependent_relayhost_maps
address_verify_sender_ttl = 0s
address_verify_service_name = verify
address_verify_transport_maps = $transport_maps
address_verify_virtual_transport = $virtual_transport
alias_database = lndb:/etc/aliases
alias_maps = lndb:/etc/aliases
allow_mail_to_commands = alias, forward
allow_mail_to_files = alias, forward
allow_min_user = no
allow_percent_hack = yes
allow_srv_lookup_fallback = no
allow_untrusted_routing = no
alternate_config_directories =
always_add_missing_headers = no
always_bcc =
anvil_rate_time_unit = 60s
anvil_status_update_time = 600s
append_at_myorigin = yes
```

Рис. 4: postconf

Обновление конфигурации postfix

```
[root@server.dmmosharov.net ~]# postconf myorigin
myorigin = $myhostname
[root@server.dmmosharov.net ~]# postconf mydomain
mydomain = dmmosharov.net
[root@server.dmmosharov.net ~]# postconf -e 'myorigin = $mydomain'
> ^C
[root@server.dmmosharov.net ~]# postconf -e 'myorigin = $mydomain'
postconf: fatal: missing '=' after attribute name: "???myorigin"
[root@server.dmmosharov.net ~]# postconf -e 'myorigin = $mydomain'
[root@server.dmmosharov.net ~]# postconf myorigin
myorigin = $mydomain
[root@server.dmmosharov.net ~]# postfix check
[root@server.dmmosharov.net ~]# systemctl reload postfix
[root@server.dmmosharov.net ~]# █
```

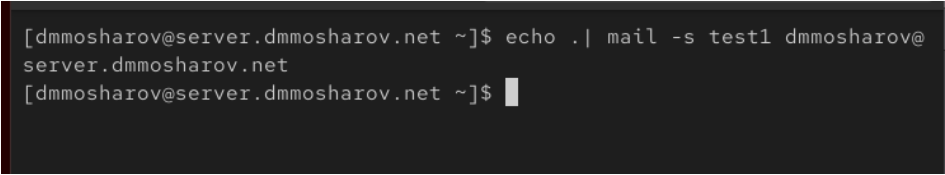
Рис. 5: Обновление конфигурации postfix

```
[root@server.dmmosharov.net ~]# postconf -n
alias_database = lmbd:/etc/aliases
alias_maps = lmbd:/etc/aliases
command_directory = /usr/sbin
compatibility_level = 3.8
daemon_directory = /usr/libexec/postfix
data_directory = /var/lib/postfix
debug_peer_level = 2
debugger_command = PATH=/bin:/usr/bin:/usr/local/bin:/usr/X11R6/bin ddd
                        $daemon_directory/$process_name $process_id & sleep 5
default_database_type = lmbd
html_directory = no
inet_interfaces = localhost
inet_protocols = all
mail_owner = postfix
mailq_path = /usr/bin/mailq.postfix
manpage_directory = /usr/share/man
meta_directory = /etc/postfix
mydestination = $myhostname, localhost.$mydomain, localhost
myorigin = $mydomain
newaliases_path = /usr/bin/newaliases.postfix
queue_directory = /var/spool/postfix
readme_directory = /usr/share/doc/postfix/README_FILES
sample_directory = /usr/share/doc/postfix/samples
sendmail_path = /usr/sbin/sendmail.postfix
setgid_group = postdrop
shlib_directory = /usr/lib64/postfix
smtp_tls_CAfile = /etc/pki/tls/certs/ca-bundle.crt
smtp_tls_CApith = /etc/pki/tls/certs
smtp_tls_security_level = may
smtpd_tls_cert_file = /etc/pki/tls/certs/postfix.pem
smtpd_tls_key_file = /etc/pki/tls/private/postfix.key
smtpd_tls_security_level = may
unknown_local_recipient_reject_code = 550
[root@server.dmmosharov.net ~]#
```

Рис. 6: postfix -n

```
[root@server.dmmosharov.net ~]# postconf -e 'mydomain = dmmosharov.net'
[root@server.dmmosharov.net ~]# postconf inet_protocols
inet_protocols = all
[root@server.dmmosharov.net ~]# postconf -e 'inet_protocols = ipv4'
[root@server.dmmosharov.net ~]# postfix check
[root@server.dmmosharov.net ~]# systemctl reload postfix
[root@server.dmmosharov.net ~]#
```

Рис. 7: Обновление настроек протоколов



```
[dmmosharov@server.dmmosharov.net ~]$ echo . | mail -s test1 dmmosharov@  
server.dmmosharov.net  
[dmmosharov@server.dmmosharov.net ~]$
```

Рис. 8: Отправка письма

```
[dmmosharov@server.dmmosharov.net ~]$ sudo -i
[sudo] password for dmmosharov:
[root@server.dmmosharov.net ~]# tail -f /var/log/maillog
Jan 29 20:24:44 server postfix/postfix-script[158765]: refreshing the P
ostfix mail system
Jan 29 20:24:44 server postfix/master[157834]: reload -- version 3.8.5,
configuration /etc/postfix
Jan 29 20:24:44 server postfix/master[157834]: warning: ignoring inet_p
rotocols parameter value change
Jan 29 20:24:44 server postfix/master[157834]: warning: old value: "all
", new value: "ipv4"
Jan 29 20:24:44 server postfix/master[157834]: warning: to change inet_
protocols, stop and start Postfix
Jan 29 20:25:34 server postfix/pickup[158771]: CE5D823B7826: uid=1001 f
rom=<dmmosharov>
Jan 29 20:25:34 server postfix/cleanup[158914]: CE5D823B7826: message-i
d=<20260129202534.CE5D823B7826@server.dmmosharov.net>
Jan 29 20:25:34 server postfix/qmgr[158772]: CE5D823B7826: from=<dmmosh
arov@dmmosharov.net>, size=346, nrcpt=1 (queue active)
Jan 29 20:25:34 server postfix/local[158917]: CE5D823B7826: to=<dmmosha
rov@server.dmmosharov.net>, relay=local, delay=0.02, delays=0.02/0.01/0
/0, dsn=2.0.0, status=sent (delivered to mailbox)
Jan 29 20:25:34 server postfix/qmgr[158772]: CE5D823B7826: removed
```

Рис. 9: Лог почты

```
[dmmosharov@server.dmmosharov.net ~]$ sudo ls /var/spool/mail
[sudo] password for dmmosharov:
dmmosharov  vagrant
You have new mail in /var/spool/mail/dmmosharov
[dmmosharov@server.dmmosharov.net ~]$
```

Рис. 10: /var/spool/mail

```
root@client:~# dnf -y install postfix
Extra Packages for Enterprise Linux 10 - x86_64                42 kB/s | 40 kB  00:00
Extra Packages for Enterprise Linux 10 - x86_64                5.8 MB/s | 5.6 MB 00:00
Rocky Linux 10 - BaseOS                                       678 B/s | 4.3 kB 00:06
Rocky Linux 10 - AppStream                                    13 kB/s | 4.3 kB 00:00
Rocky Linux 10 - CDB                                           1.2 kB/s | 4.3 kB 00:03
Rocky Linux 10 - Extras                                       6.8 kB/s | 3.1 kB 00:00
Dependencies resolved.
=====
Package                Architecture    Version      Repository      Size
=====
Installing:
postfix                x86_64          2:3.8.5-8.el10 appstream       1.5 M
Installing dependencies:
postfix-lmdb            x86_64          2:3.8.5-8.el10 appstream        25 k
=====
Transaction Summary
=====
Install 2 Packages

Total download size: 1.5 M
Installed size: 4.5 M
Downloading Packages:
(1/2): postfix-lmdb-3.8.5-8.el10.x86_64.rpm                  161 kB/s | 25 kB  00:00
(2/2): postfix-3.8.5-8.el10.x86_64.rpm                       5.3 MB/s | 1.5 MB 00:00
-----
Total                                                         2.7 MB/s | 1.5 MB 00:00
Running transaction check
Transaction check succeeded.
Running transaction test
Transaction test succeeded.
Running transaction
  Preparing      : 1/1
  Installing     : postfix-lmdb-2:3.8.5-8.el10.x86_64        1/2
  Running scriptlet: postfix-2:3.8.5-8.el10.x86_64          2/2
  Installing     : postfix-2:3.8.5-8.el10.x86_64            2/2
  Running scriptlet: postfix-2:3.8.5-8.el10.x86_64          2/2

Installed:
postfix-2:3.8.5-8.el10.x86_64      postfix-lmdb-2:3.8.5-8.el10.x86_64

Complete!
```

Рис. 11: Установка Postfix

```
root@client:~# dnf -y install s-nail
Last metadata expiration check: 0:00:55 ago on Thu 29 Jan 2026 08:31:50 PM UTC.
Dependencies resolved.
=====
Package                Architecture      Version           Repository        Size
=====
Installing:
s-nail                  x86_64            14.9.24-12.el10  appstream         633 k
=====
Transaction Summary
=====
Install 1 Package

Total download size: 633 k
Installed size: 1.2 M
Downloading Packages:
s-nail-14.9.24-12.el10.x86_64.rpm                                2.2 MB/s | 633 kB  00:00
-----
Total                                                                1.1 MB/s | 633 kB  00:00
Running transaction check
Transaction check succeeded.
Running transaction test
Transaction test succeeded.
Running transaction
  Preparing                :
  Running scriptlet: s-nail-14.9.24-12.el10.x86_64                1/1
  Installing              : s-nail-14.9.24-12.el10.x86_64                1/1
  Running scriptlet: s-nail-14.9.24-12.el10.x86_64                1/1
Installed:
s-nail-14.9.24-12.el10.x86_64

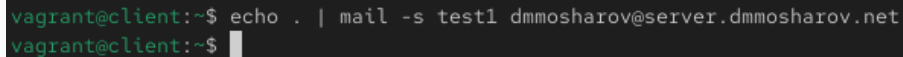
Complete!
root@client:~#
```

Рис. 12: установка s-nail

Настройка протоколов на клиенте

```
root@client:~# postconf inet_protocols
inet_protocols = all
root@client:~# postconf -e 'inet_protocols = ipv4'
root@client:~# systemctl enable postfix
Created symlink '/etc/systemd/system/multi-user.target.wants/postfix.service' → '/usr/lib/systemd/system/postfix.service'.
root@client:~# systemctl start postfix
root@client:~#
```

Рис. 13: Настройка протоколов на клиенте

A terminal window with a dark background. The prompt is 'vagrant@client:~\$'. The command entered is 'echo . | mail -s test1 dmmosharov@server.dmmosharov.net'. The prompt is repeated on the next line with a cursor.

```
vagrant@client:~$ echo . | mail -s test1 dmmosharov@server.dmmosharov.net  
vagrant@client:~$
```

Рис. 14: Отправка письма

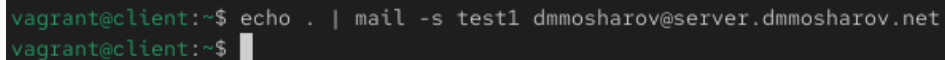
```
[dmmosharov@server.dmmosharov.net ~]$ tail -f /var/log/maillog
tail: cannot open '/var/log/maillog' for reading: Permission denied
tail: no files remaining
[dmmosharov@server.dmmosharov.net ~]$ sudo -i
[sudo] password for dmmosharov:
[root@server.dmmosharov.net ~]# tail -f /var/log/maillog
Jan 29 20:24:44 server postfix/postfix-script[158765]: refreshing the Postfix mail system
Jan 29 20:24:44 server postfix/master[157834]: reload -- version 3.8.5, configuration /etc/postfix
Jan 29 20:24:44 server postfix/master[157834]: warning: ignoring inet_protocols parameter value change
Jan 29 20:24:44 server postfix/master[157834]: warning: old value: "all", new value: "ipv4"
Jan 29 20:24:44 server postfix/master[157834]: warning: to change inet_protocols, stop and start Postfix
Jan 29 20:25:34 server postfix/pickup[158771]: CE5D823B7826: uid=1001 from=<dmmosharov>
Jan 29 20:25:34 server postfix/cleanup[158914]: CE5D823B7826: message-id=<20260129202534.CE5D823B7826@server.dmmosharov.net>
Jan 29 20:25:34 server postfix/qmgr[158772]: CE5D823B7826: from=<dmmosharov@dmmosharov.net>, size=346, nrcpt=1 (queue active)
Jan 29 20:25:34 server postfix/local[158917]: CE5D823B7826: to=<dmmosharov@server.dmmosharov.net>, relay=local, delay=0.02, delays=0.02/0.01/0/0, dsn=2.0.0, status=sent (delivered to mailbox)
Jan 29 20:25:34 server postfix/qmgr[158772]: CE5D823B7826: removed
```

Рис. 15: Логи почты

Включение получения писем из локальной сети

```
[root@server.dmmosharov.net ~]# postconf inet_interfaces
inet_interfaces = localhost
[root@server.dmmosharov.net ~]# postconf mynetworks
mynetworks = 127.0.0.1/32
[root@server.dmmosharov.net ~]# postconf -e 'inet_interfaces = all'
[root@server.dmmosharov.net ~]# postconf -e 'mynetworks = 127.0.0.0/8,
192.168.0.0/16'
[root@server.dmmosharov.net ~]# postfix check
[root@server.dmmosharov.net ~]# systemctl reload postfix
[root@server.dmmosharov.net ~]# systemctl stop postfix
[root@server.dmmosharov.net ~]# systemctl start postfix
[root@server.dmmosharov.net ~]#
```

Рис. 16: Включение получения писем из локальной сети

A terminal window with a dark background and green text. The prompt is 'vagrant@client:~\$'. The command entered is 'echo . | mail -s test1 dmmosharov@server.dmmosharov.net'. The prompt is repeated on the next line with a white cursor block.

```
vagrant@client:~$ echo . | mail -s test1 dmmosharov@server.dmmosharov.net  
vagrant@client:~$ █
```

Рис. 17: Повторная отправка письма

Успешная отправка письма согласно логам

```
Jan 29 20:38:32 server postfix/master[157834]: warning: to change inet_
interfaces, stop and start Postfix
Jan 29 20:38:38 server postfix/postfix-script[160741]: stopping the Pos
tfix mail system
Jan 29 20:38:38 server postfix/master[157834]: terminating on signal 15
Jan 29 20:38:44 server postfix/postfix-script[160841]: starting the Pos
tfix mail system
Jan 29 20:38:44 server postfix/master[160843]: daemon started -- versio
n 3.8.5, configuration /etc/postfix
Jan 29 20:39:11 server postfix/smtpd[160902]: warning: run-time library
vs. compile-time header version mismatch: OpenSSL 3.5.0 may not be com
patible with OpenSSL 3.2.0
Jan 29 20:39:11 server postfix/smtpd[160902]: connect from unknown[192.
168.1.30]
Jan 29 20:39:12 server postfix/smtpd[160902]: 005F023B81DD: client=unkn
own[192.168.1.30]
Jan 29 20:39:12 server postfix/cleanup[160906]: 005F023B81DD: message-i
d=<20260129203911.DE4249071E@client.dmmosharov.net>
Jan 29 20:39:12 server postfix/smtpd[160902]: disconnect from unknown[1
92.168.1.30] ehlo=2 starttls=1 mail=1 rcpt=1 data=1 quit=1 commands=7
Jan 29 20:39:12 server postfix/qmgr[160845]: 005F023B81DD: from=<vagran
t@client.dmmosharov.net>, size=554, nrcpt=1 (queue active)
Jan 29 20:39:12 server postfix/local[160907]: 005F023B81DD: to=<dmmosha
rov@server.dmmosharov.net>, relay=local, delay=0.01, delays=0.01/0.01/0
/0, dsn=2.0.0, status=sent (delivered to mailbox)
Jan 29 20:39:12 server postfix/qmgr[160845]: 005F023B81DD: removed
S
```

Рис. 18: Успешная отправка письма согласно логам

```
vagrant@client:~$ echo . | mail -s test2 dmmosharov@dmmosharov.net  
vagrant@client:~$
```

Рис. 19: Отправка письма пользователю

Неуспешная доставка письма

```
Jan 29 20:39:12 server postfix/qmgr[160845]: 005F0238810D: removed
Jan 29 20:41:22 server postfix/smtpd[161170]: warning: run-time library
vs. compile-time header version mismatch: OpenSSL 3.5.0 may not be co
mpatible with OpenSSL 3.2.0
Jan 29 20:41:22 server postfix/smtpd[161170]: connect from unknown[192.
168.1.30]
Jan 29 20:41:22 server postfix/smtpd[161170]: 65401238810D: client=unkn
own[192.168.1.30]
Jan 29 20:41:22 server postfix/cleanup[161173]: 65401238810D: message-i
d=<20260129204122.550819071Egclient.dmmosharov.net>
Jan 29 20:41:22 server postfix/smtpd[161170]: disconnect from unknown[1
92.168.1.30] ehlo=2 starttls=1 mail=1 rcpt=1 data=1 quit=1 commands=7
Jan 29 20:41:22 server postfix/qmgr[160845]: 65401238810D: from=<vagran
t@client.dmmosharov.net>, size=540, nrcpt=1 (queue active)
Jan 29 20:41:22 server postfix/smtp[161174]: warning: run-time library
vs. compile-time header version mismatch: OpenSSL 3.5.0 may not be comp
atible with OpenSSL 3.2.0
Jan 29 20:41:22 server postfix/smtp[161174]: 65401238810D: to=<dmmoshar
ov@dmmosharov.net>, relay=none, delay=0.03, delays=0.01/0.02/0/0, dsn=5
.4.6, status=bounced (mail for dmmosharov.net loops back to myself)
Jan 29 20:41:22 server postfix/cleanup[161173]: 605522388F64: message-i
d=<20260129204122.605522388F64@server.dmmosharov.net>
Jan 29 20:41:22 server postfix/bounce[161175]: 65401238810D: sender non
-delivery notification: 605522388F64
Jan 29 20:41:22 server postfix/qmgr[160845]: 605522388F64: from=<>, siz
e=2559, nrcpt=1 (queue active)
Jan 29 20:41:22 server postfix/qmgr[160845]: 65401238810D: removed
Jan 29 20:41:22 server postfix/smtp[161174]: 605522388F64: to=<vagrant@
client.dmmosharov.net>, relay=none, delay=0, delays=0/0/0/0, dsn=5.4.4,
status=bounced (Host or domain name not found. Name service error for
name=client.dmmosharov.net type=A: Host not found)
Jan 29 20:41:22 server postfix/qmgr[160845]: 605522388F64: removed
```

Рис. 20: Неуспешная доставка письма


```
[root@server.dmmosharov.net ~]# postqueue -p  
Mail queue is empty  
[root@server.dmmosharov.net ~]#
```

Рис. 21: postqueue -p

```
GNU nano 8.1 /var/named/master/fz/dmmosharov.net Modified
$TTL 1D
@ IN SOA @ server.dmmosharov.net. (
    2026012702 ; serial
    1D ; refresh
    1H ; retry
    1W ; expire
    3H ) ; minimum
    NS @
    A 192.168.1.1
$ORIGIN dmmosharov.net.
server A 192.168.1.1
ns A 192.168.1.1
www A 192.168.1.1
mail A 192.168.1.1
```

Рис. 22: Файл прямой зоны

```
GNU nano 8.1 /var/named/master/rz/192.168.1
$TTL 1D
@ IN SOA @ server.dmmosharov.net. (
    2026012703 ; serial
    1D ; refresh
    1H ; retry
    1W ; expire
    3H ) ; minimum
NS @
A 192.168.1.1
IN PTR server.dmmosharov.net.
$ORIGIN 1.168.192.in-addr.arpa.
1 IN PTR server.dmmosharov.net.
1 IN PTR ns.dmmosharov.net.
1 IN PTR www.dmmosharov.net.
1 IN PTR mail.dmmosharov.net.
```

Рис. 23: Файл обратной зоны

Обновление списков назначения почты

```
[root@server.dmmosharov.net ~]# postconf -e 'mydestination = $myhostname, localhost.$mydomain, localhost, $mydomain'
[root@server.dmmosharov.net ~]# postfix check
[root@server.dmmosharov.net ~]# systemctl reload postfix
[root@server.dmmosharov.net ~]# restorecon -vR /etc
[root@server.dmmosharov.net ~]# restorecon -vR /var/named
[root@server.dmmosharov.net ~]# systemctl restart named
[root@server.dmmosharov.net ~]# postqueue -f
[root@server.dmmosharov.net ~]#
```

Рис. 24: Обновление списков назначения почты

Лог об успешно доставленном письме

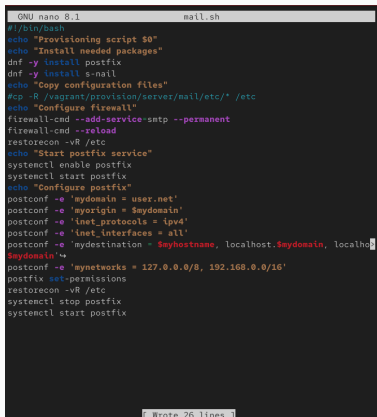
```
Jan 29 20:54:26 server postfix/smtpd[163127]: warning: run-time library  
vs. compile-time header version mismatch: OpenSSL 3.5.0 may not be com  
patible with OpenSSL 3.2.0  
Jan 29 20:54:26 server postfix/smtpd[163127]: connect from unknown[192.  
168.1.30]  
Jan 29 20:54:26 server postfix/smtpd[163127]: C2F4223CFFB8: client=unkn  
own[192.168.1.30]  
Jan 29 20:54:26 server postfix/cleanup[163131]: C2F4223CFFB8: message-i  
d=<20260129205426.B00129071B@client.dmmosharov.net>  
Jan 29 20:54:26 server postfix/smtpd[163127]: disconnect from unknown[1  
92.168.1.30] ehlo=2 starttls=1 mail=1 rcpt=1 data=1 quit=1 commands=7  
Jan 29 20:54:26 server postfix/qmgr[162971]: C2F4223CFFB8: from=<vagran  
t@client.dmmosharov.net>, size=540, nrcpt=1 (queue active)  
Jan 29 20:54:26 server postfix/local[163132]: C2F4223CFFB8: to=<dmmosha  
rov@dmmosharov.net>, relay=local, delay=0.02, delays=0.01/0.01/0/0, dsn  
=2.0.0, status=sent (delivered to mailbox)  
Jan 29 20:54:26 server postfix/qmgr[162971]: C2F4223CFFB8: removed
```

Рис. 25: Лог об успешно доставленном письме

Сохранение конфигурации

```
[root@server.dmmosharov.net ~]# cd /vagrant/provision/server/dns/var/named
[root@server.dmmosharov.net named]# cp -R /var/named/* /vagrant/provision/server/dns/var/named
cp: overwrite '/vagrant/provision/server/dns/var/named/data/named.run-20251215'? y
cp: overwrite '/vagrant/provision/server/dns/var/named/data/named.run'? y
cp: overwrite '/vagrant/provision/server/dns/var/named/data/named.run-20260120'? y
cp: overwrite '/vagrant/provision/server/dns/var/named/data/named.run-20260127'? y
cp: overwrite '/vagrant/provision/server/dns/var/named/dynamic/managed-keys.bind'? y
cp: overwrite '/vagrant/provision/server/dns/var/named/dynamic/managed-keys.bind.jnl'? y
cp: overwrite '/vagrant/provision/server/dns/var/named/master/fz/dmmosharov.net'? y
cp: overwrite '/vagrant/provision/server/dns/var/named/master/fz/user.net'? y
cp: overwrite '/vagrant/provision/server/dns/var/named/master/rz/192.168.1.backup'? y
cp: overwrite '/vagrant/provision/server/dns/var/named/master/rz/192.168.1'? y
cp: overwrite '/vagrant/provision/server/dns/var/named/named.ca'? y
cp: overwrite '/vagrant/provision/server/dns/var/named/named.empty'? y
cp: overwrite '/vagrant/provision/server/dns/var/named/named.localhost'? y
cp: overwrite '/vagrant/provision/server/dns/var/named/named.loopback'? y
[root@server.dmmosharov.net named]# cd /vagrant/provision/server
[root@server.dmmosharov.net server]# touch mail.sh
[root@server.dmmosharov.net server]# chmod +x mail.sh
[root@server.dmmosharov.net server]# nano mail.sh
```

Рис. 26: Сохранение конфигурации



```
GNU nano 8.1 mail.sh
#!/bin/bash
echo "Provisioning script $0"
echo "Install needed packages"
dnf -y install postfix
dnf -y install s-nail
echo "Copy configuration files"
#cp -R /vagrant/provision/server/mail/etc/* /etc
echo "Configure firewall"
firewall-cmd --add-service=smtp --permanent
firewall-cmd --reload
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'
postfix set-permissions
restorecon -vR /etc
systemctl stop postfix
systemctl start postfix

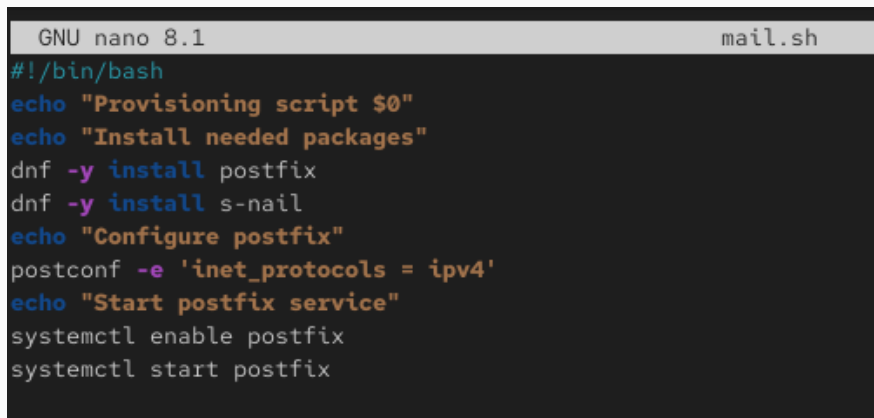
[ Wrote 26 lines ]
```

Рис. 27: mail.sh

Создание скрипта mail.sh для клиента

```
root@client:~# cd /vagrant/provision/client  
root@client:/vagrant/provision/client# touch mail.sh  
root@client:/vagrant/provision/client# chmod +x mail.sh  
root@client:/vagrant/provision/client# nano mail.sh
```

Рис. 28: Создание скрипта mail.sh для клиента



```
GNU nano 8.1 mail.sh
#!/bin/bash
echo "Provisioning script $0"
echo "Install needed packages"
dnf -y install postfix
dnf -y install s-nail
echo "Configure postfix"
postconf -e 'inet_protocols = ipv4'
echo "Start postfix service"
systemctl enable postfix
systemctl start postfix
```

Рис. 29: mail.sh для клиента

```
108     server.vm.provision "server mail",
109         type: "shell",
110         preserve_order: true,
111         path: "provision/server/mail.sh"
112
113 end
114
115
116 ## Client configuration
117 config.vm.define "client", autostart: false do |client|
118     client.vm.box = "rockylinux8"
119     client.vm.hostname = "client"
120
121     client.vm.boot_timeout = 1440
122
123     client.ssh.insert_key = false
124     client.ssh.username = "vagrant"
125     client.ssh.password = "vagrant"
126
127     client.vm.network :private_network,
128         type: "dhcp",
129         virtualbox____intnet: true
130
131     client.vm.provider :virtualbox do |virtualbox|
132         virtualbox.customize ["modifyvm", :id, "--vrdm", "on"]
133         virtualbox.customize ["modifyvm", :id, "--vrdmport", "3392"]
134     end
135
136     client.vm.provision "client dummy",
137         type: "shell",
138         preserve_order: true,
139         path: "provision/client/01-dummy.sh"
140
141     client.vm.provision "client routing",
142         type: "shell",
143         preserve_order: true,
144         run: "always",
145         path: "provision/client/01-routing.sh"
146     client.vm.provision "client mail",
147         type: "shell",
148         preserve_order: true,
149         path: "provision/client/mail.sh"
150 end
151 end
```

Рис. 30: vagrantfile

В результате выполнения лабораторной работы были получены навыки настройки smtp сервера