

Лабораторная работа 8

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Задача

1. Установите на виртуальной машине server SMTP-сервер postfix (см. раздел 8.4.1).

1. Установите на виртуальной машине server SMTP-сервер postfix (см. раздел 8.4.1).
2. Сделайте первоначальную настройку postfix при помощи утилиты postconf, задав отправку писем не на локальный хост, а на сервер в домене (см. раздел 8.4.2).

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3. Проверьте отправку почты с сервера и клиента (см. раздел 8.4.3).

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3. Проверьте отправку почты с сервера и клиента (см. раздел 8.4.3).
4. Сконфигурируйте Postfix для работы в домене. Проверьте отправку почты с сервера и клиента (см. раздел 8.4.4).

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3. Проверьте отправку почты с сервера и клиента (см. раздел 8.4.3).
4. Сконфигурируйте Postfix для работы в домене. Проверьте отправку почты с сервера и клиента (см. раздел 8.4.4).
5. Напишите скрипт для Vagrant, фиксирующий действия по установке и настройке Postfix во внутреннем окружении виртуальной машины server. Соответствующим образом внесите изменения в Vagrantfile (см. раздел 8.4.5).

Выполнение

```
root@server:~  
[vagrant@server ~]$ sudo -i  
[root@server ~]# dnf -y install postfix s-nail; firewall-cmd --add-service smtp;  
firewall-cmd --add-service smtp --permanent; restorecon -vR /etc; systemctl ena  
ble --now postfix  
Rocky Linux 9 - BaseOS                    5.2 kB/s | 4.1 kB      00:00  
Rocky Linux 9 - AppStream                  6.1 kB/s | 4.5 kB      00:00  
Rocky Linux 9 - Extras                     4.6 kB/s | 2.9 kB      00:00  
Dependencies resolved.  
=====
```

Package	Architecture	Version	Repository	Size
---------	--------------	---------	------------	------

```
=====
```

Installing:

postfix	x86_64	2:3.5.9-24.el9	appstream	1.4 M
s-nail	x86_64	14.9.22-6.el9	appstream	621 k

Transaction Summary

```
=====
```

Install 2 Packages

Total download size: 2.0 M
Installed size: 5.6 M
Downloading Packages:

(1/2): s-nail-14.9.22-6.el9.x86_64.rpm	1.1 MB/s 621 kB	00:00
(2/2): postfix-3.5.9-24.el9.x86_64.rpm	2.4 MB/s 1.4 MB	00:00

```
virtual_transport = virtual
virtual_transport_rate_delay = $default_transport_rate_delay
virtual_uid_maps =
[root@server ~]# postconf myorigin
myorigin = $myhostname
[root@server ~]# postconf mydomain
mydomain = user.net
[root@server ~]# postconf -e 'mydomain = dmgeneralov.net'
[root@server ~]# postconf -e 'myorigin = $mydomain'
[root@server ~]# postconf mydomain
mydomain = dmgeneralov.net
[root@server ~]# postconf myorigin
myorigin = $mydomain
[root@server ~]# postfix check
[root@server ~]# systemctl reload postfix
[root@server ~]# postconf -n
alias_database = hash:/etc/aliases
alias_maps = hash:/etc/aliases
command_directory = /usr/sbin
compatibility_level = 2
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 d
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
mydomain = dmgeneralov.net
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
```

```
root@server:~  
smtpd_tls_security_level = may  
unknown_local_recipient_reject_code = 550  
[root@server ~]#  
[root@server ~]# postconf inet_protocols  
inet_protocols = all  
[root@server ~]# postconf -e 'inet_protocols = ipv4'  
[root@server ~]# postfix check  
[root@server ~]# systemctl reload postfix  
[root@server ~]# echo . | mail -s test1 vagrant@server.dmgeneralov.net  
[root@server ~]# ls /var/spool/mail  
user vagrant  
[root@server ~]# ls /var/spool/mail/vagrant  
/var/spool/mail/vagrant  
[root@server ~]# cat /var/spool/mail/vagrant  
[root@server ~]#  
  
vagrant@server:~ — sudo tail -f /var/log/maillog  
[vagrant@server ~]$ tail -f /var/log/maillog  
tail: cannot open '/var/log/maillog' for reading: Permission denied  
tail: no files remaining  
[vagrant@server ~]$ sudo tail -f /var/log/maillog  
Dec 1 09:29:58 server postfix/postfix-script[7771]: starting the Postfix mail system  
Dec 1 09:29:58 server postfix/master[7773]: daemon started -- version 3.5.9, configuration /etc/postfix  
Dec 1 09:32:31 server postfix/postfix-script[7902]: refreshing the Postfix mail system  
Dec 1 09:32:31 server postfix/master[7773]: reload -- version 3.5.9, configuration /etc/postfix  
Dec 1 09:34:49 server postfix/postfix-script[8008]: refreshing the Postfix mail system  
Dec 1 09:34:49 server postfix/master[7773]: reload -- version 3.5.9, configuration /etc/postfix  
Dec 1 09:34:49 server postfix/master[7773]: warning: ignoring inet_protocols parameter value change  
Dec 1 09:34:49 server postfix/master[7773]: warning: old value: "all", new value: "ipv4"  
Dec 1 09:34:49 server postfix/master[7773]: warning: to change inet_protocols, stop and start Postfix  
  
Dec 1 09:36:04 server postfix/pickup[8014]: C1A60475CAE: uid=0 from=<root>  
Dec 1 09:36:04 server postfix/cleanup[8074]: C1A60475CAE: message-id=<20231201093604.C1A60475CAE@server.user.net>  
Dec 1 09:36:04 server postfix/qmgr[8013]: C1A60475CAE: from=<root@dmgeneralov.net>, size=329, nrcpt=1 (queue active)  
Dec 1 09:36:04 server postfix/smtp[8076]: connect to server.dmgeneralov.net[192.168.1.1]:25: Connection refused  
Dec 1 09:36:04 server postfix/smtp[8076]: C1A60475CAE: to=<vagrant@server.dmgeneralov.net>, relay=none, delay=0.17, del  
ays=0.03/0.11/0.02/0, dsn=4.4.1, status=deferred (connect to server.dmgeneralov.net[192.168.1.1]:25: Connection refused)
```

```

# 1
# 2
# 3
# 4
# 5
# 6
# 7

# 8. Проверьте отработку письма с сервера в клиенте
# 9. Сконфигурируйте Postfix для работы в домене.
# 10. Напишите скрипт для Vagrant, фиксирующий деп
образом внесите изменения в Vagrantfile (см. разд

# Выполнение лабораторной работы

client [Running] - Oracle VM VirtualBox
Machine View Input Devices Help
Utilities Terminal Dec 1 09:43 en rookov po

vagrant@client:~$
postconf: invalid option -- 's'
postconf: fatal: usage: postconf [-a (server SASL types)] [-A (client SASL types)]
[-b (bounce templates)] [-c config_dir] [-c param_class] [-d (parameter default)]
[-e (edit configuration)] [-f (fold lines)] [-F (master.cf fields)] [-h (no names)]
[-H (no values)] [-l (lock types)] [-M (map types)] [-M (master.cf)] [-n (non-default parameters)]
[-o name=value (override parameter value)] [-p (mail.cf, defaults)] [-P (master.cf parameters)] [-c (bounce templates)] [-t (complete-version|public-key-algorithm) [-v (verbose)] [-x (expand parameter values)] [-X (exclude)] [-s (comment-out)] [name...]
Created symlink /etc/systemd/system/multi-user.target.wants/postfix.service → /usr/lib/systemd/system/postfix.service.
[root@client ~]# df install -y postfix s-mail: postconf -e 'inet_protocols = ip
v4; systemctl enable --now postfix; echo . | mail -s test1 vagrant@server.dgeneralo
v.net
Last metadata expiration check: 8:08:25 ago on Fri 01 Dec 2023 09:41:26 AM UTC.
Package postfix-3.5.9-24.el9.x86_64 is already installed.
Package s-mail-14.9.22-6.el9.x86_64 is already installed.
Dependencies resolved.
Nothing to do.
Complete!
[root@client ~]#
logout
(vagrant@client ~) $ echo . | mail -s test1 vagrant@server.dgeneralo.net
[vagrant@client ~]#

> # http
client: Connection 'eth0' successfully deactivated (0-0

```

```

root@server:~$
inet_protocols = all
[root@server ~]# postconf -e 'inet_protocols = ipv4'
[root@server ~]# postfix check
[root@server ~]# systemctl reload postfix
[root@server ~]# echo . | mail -s test1 vagrant@server.dgeneralo.net
[root@server ~]# ls /var/spool/mail/
user vagrant
[root@server ~]# ls /var/spool/mail/vagrant
/var/spool/mail/vagrant
[root@server ~]# cat /var/spool/mail/vagrant
[root@server ~]#

[root@server ~]# systemctl restart postfix.service
[root@server ~]# echo . | mail -s test1 vagrant@server.dgeneralo.net
[root@server ~]# telnet server.dgeneralo.net 25
bash: telnet: command not found...

vagrant@server:~$ sudo tail -f /var/log/maillog
Dec 1 09:36:04 server postfix/qmgr[8013]: C1A60475CAE: from=root@dgeneralo.net, size=329, nrcpt=1 (queue active)
Dec 1 09:36:04 server postfix/smtp[8076]: connect to server.dgeneralo.net[192.168.1.1]:25: Connection refused
Dec 1 09:36:04 server postfix/smtp[8076]: C1A60475CAE: to=vagrant@server.dgeneralo.net, relay=none, delay=0.17, de
lays=0.03/0.11/0.02/0, dsn=4.4.1, status=deferred (connect to server.dgeneralo.net[192.168.1.1]:25: Connection refused)
Dec 1 09:38:54 server postfix/master[7772]: terminating on signal 15
Dec 1 09:38:54 server postfix/postfix-script[8119]: starting the Postfix mail system
Dec 1 09:38:54 server postfix/master[8117]: daemon started -- version 3.5.9, configuration /etc/postfix
Dec 1 09:38:54 server postfix/pickup[8216]: 903C3475CA8: uid=0 from:root
Dec 1 09:38:58 server postfix/cleanup[8224]: 903C3475CA8: message-id=<20231201093858.903C3475CA8@server.user.net>
Dec 1 09:38:58 server postfix/qmgr[8219]: 903C3475CA8: from=root@dgeneralo.net, size=329, nrcpt=1 (queue active)
Dec 1 09:38:58 server postfix/smtp[8226]: connect to server.dgeneralo.net[192.168.1.1]:25: Connection refused
Dec 1 09:38:58 server postfix/smtp[8226]: 903C3475CA8: to=vagrant@server.dgeneralo.net, relay=none, delay=0.13, de
lays=0.03/0.10/0, dsn=4.4.1, status=deferred (connect to server.dgeneralo.net[192.168.1.1]:25: Connection refused)

```

Рис. 4: postfix

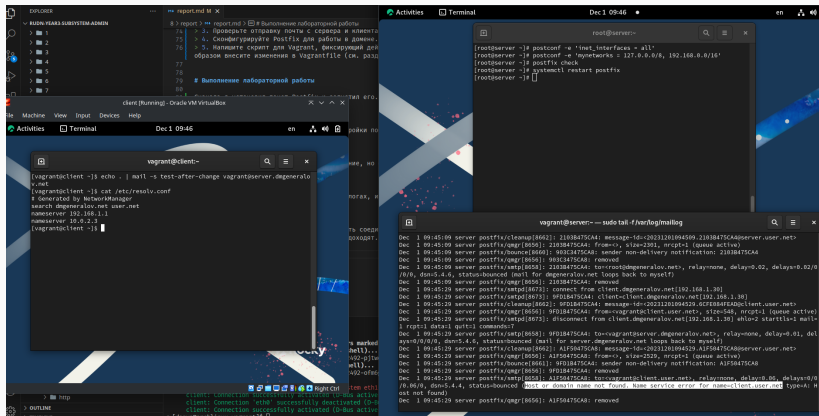


Рис. 5: postfix

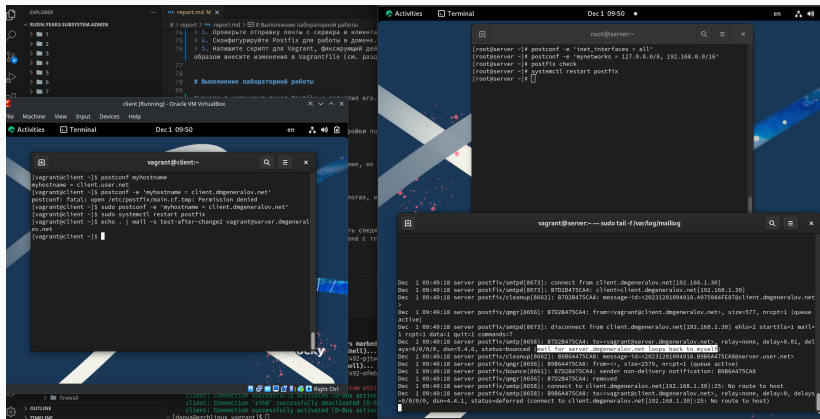


Рис. 6: postfix

```

root@server:~
/var/named/master/fz/dmgeneralov.net Modified
$ORIGIN .
$TTL 86400 ; 1 day
dmgeneralov.net IN SOA dmgeneralov.net. server.dmgeneralov.net. 2023111608 ; serial
                        86400 ; refresh (1 day)
                        3600 ; retry (1 hour)
                        604800 ; expire (1 week)
                        10800 ; minimum (3 hours)
                        )
                        NS dmgeneralov.net.
                        A 192.168.1.1
                        MX 10 mail.dmgeneralov.net.
$ORIGIN dmgeneralov.net.
$TTL 300 ; 5 minutes
client IN A 192.168.1.30
      TXT "31a02accc76fb2af360c925e6363e"
$TTL 86400 ; 1 day
hftp IN A 192.168.1.1
s IN A 192.168.1.1
server IN A 192.168.1.1
www IN A 192.168.1.1
mail IN A 192.168.1.1

vagrant@server:~ — sudo nano /var/named/rz/192.168.1 Modified
GNU nano 5.6.1 /var/named/master/rz/192.168.1 Modified
$ORIGIN .
$TTL 86400 ; 1 day
1.168.192.in-addr.arpa IN SOA 1.168.192.in-addr.arpa. server.dmgeneralov.net. 2023111605 ; serial
                        86400 ; refresh (1 day)
                        3600 ; retry (1 hour)
                        604800 ; expire (1 week)
                        10800 ; minimum (3 hours)
                        )
                        NS 1.168.192.in-addr.arpa.
                        A 192.168.1.1
                        PTR server.dmgeneralov.net.
$ORIGIN 1.168.192.in-addr.arpa.
1 PTR server.dmgeneralov.net.
  PTR ns.dmgeneralov.net.
  PTR dhcp.dmgeneralov.net.
  PTR www.dmgeneralov.net.
  PTR mail.dmgeneralov.net.
$TTL 300 ; 5 minutes
30 PTR client.dmgeneralov.net.

```

```
root@server ~]# postconf -e 'mydestination = $myhostname, localhost.$mydomain, localhost, $mydomain'
root@server ~]# postfix check
root@server ~]# systemctl restart postfix
root@server ~]# restorecon -vR /etc
root@server ~]# restorecon -vR /var/named
root@server ~]# systemctl restart named
root@server ~]# postqueue -f
root@server ~]# postqueue -p
Queue ID= 986A475CA8 2579 Fri Dec 1 09:49:18 MAILER-DAEMON
      (connect to client.dmgeneralov.net[192.168.1.30]:25: No route to host)
      vagrant@client.dmgeneralov.net

-- 2 Kbytes in 1 Request.
root@server ~]# tail -f /var/log/maillog
Dec 1 09:55:08 server postfix/qmgr[8656]: C1A60475CAE: removed
Dec 1 09:55:08 server postfix/smtp[8828]: DE9FF475CB1: to=<root@dmgeneralov.net>, relay=none, delay=0.06, delays=0.05/0/0/0, dsn=5.4.6, status=bounced (mail for dmgeneralov.net loops back to myself)
Dec 1 09:55:08 server postfix/qmgr[8656]: DE9FF475CB1: removed
Dec 1 09:57:03 server postfix/postfix-script[8954]: stopping the Postfix mail system
Dec 1 09:57:03 server postfix/master[8654]: terminating on signal 15
Dec 1 09:57:04 server postfix/postfix-script[9030]: starting the Postfix mail system
Dec 1 09:57:04 server postfix/master[9032]: daemon started -- version 3.5.9, configuration /etc/postfix
Dec 1 09:57:24 server postfix/qmgr[9034]: B9B6A475CA8: from=<>, size=2579, nrcpt=1 (queue active)
Dec 1 09:57:24 server postfix/smtp[9073]: connect to client.dmgeneralov.net[192.168.1.30]:25: No route to host
Dec 1 09:57:24 server postfix/smtp[9073]: B9B6A475CA8: to=<vagrant@client.dmgeneralov.net>, relay=none, delay=486, delays=486/0/0.01/0, dsn=4.4.1, status=deferred (connect to client.dmgeneralov.net[192.168.1.30]:25: No route to host)

Dec 1 09:57:59 server postfix/smtpd[9090]: connect from client.dmgeneralov.net[192.168.1.30]
Dec 1 09:57:59 server postfix/smtpd[9090]: CE421475CA7: client=client.dmgeneralov.net[192.168.1.30]
Dec 1 09:57:59 server postfix/cleanup[9092]: CE421475CA7: message-id=<20231201095759.8F01C84FE87@client.dmgeneralov.net>
Dec 1 09:57:59 server postfix/smtpd[9090]: disconnect from client.dmgeneralov.net[192.168.1.30] ehlo=2 starttls=1 mail=1 rcpt=1 data=1 quit=1 commands=7
Dec 1 09:57:59 server postfix/qmgr[9034]: CE421475CA7: from=<vagrant@client.dmgeneralov.net>, size=569, nrcpt=1 (queue active)
Dec 1 09:57:59 server postfix/smtp[9073]: CE421475CA7: to=<vagrant@server.dmgeneralov.net>, relay=none, delay=0.04, delays=0.03/0.01/0/0, dsn=5.4.6, status=bounced (mail for server.dmgeneralov.net loops back to myself)
Dec 1 09:57:59 server postfix/cleanup[9092]: D7C97475CAB: message-id=<20231201095759.D7C97475CAB@server.user.net>
Dec 1 09:57:59 server postfix/qmgr[9034]: D7C97475CAB: from=<>, size=2571, nrcpt=1 (queue active)
Dec 1 09:57:59 server postfix/bounce[9093]: CE421475CA7: sender non-delivery notification: D7C97475CAB
Dec 1 09:57:59 server postfix/smtp[9073]: connect to client.dmgeneralov.net[192.168.1.30]:25: No route to host
Dec 1 09:57:59 server postfix/qmgr[9034]: CE421475CA7: removed
Dec 1 09:57:59 server postfix/smtp[9073]: D7C97475CAB: to=<vagrant@client.dmgeneralov.net>, relay=none, delay=0, delays=0/0/0/0, dsn=4.4.1, status=deferred (connect to client.dmgeneralov.net[192.168.1.30]:25: No route to host)
```


The image shows a Vagrant environment setup with two virtual machines: 'server' and 'client'. The terminal on the left shows the provisioning process for the 'server' VM, including installing postfix and configuring it. The Vagrantfile on the right shows the configuration for both VMs, including their provision scripts, memory, and provider settings.

```
work > dngeneralov > vagrant > provision > server > mail.sh
9 echo "Start postfix service"
10 systemctl enable postfix
11 systemctl start postfix
12 echo "Configure postfix"
13 postconf -e 'mydomain = dngeneralov.net'
14 postconf -e 'myorigin = $mydomain'
15 postconf -e 'inet_protocols = ipv4'
16 postconf -e 'inet_interfaces = all'
17 postconf -e 'myhostname = server.dngeneralov.net'
18 postconf -e 'mydestination = $myhostname, localhost.$mydomain, localhost'
19 postconf -e 'mynetworks = 127.0.0.0/8, 192.168.0.0/16'
20
21 postfix set-permissions
22 restorecon -vR /etc
23 systemctl stop postfix
24 systemctl start postfix
mail.sh U x

work > dngeneralov > vagrant > provision > client > mail.sh
1 #!/bin/bash
2 echo "Provisioning script $0"
3 echo "Install needed packages"
4 dnf -y install postfix
5 dnf -y install s-nail
6 echo "Configure postfix"
7 postconf -e 'inet_protocols = ipv4'
8 postconf -e 'myhostname = client.dngeneralov.net'
9 postconf -e 'mydomain = dngeneralov.net'
10 echo "Start postfix service"
11 systemctl enable postfix
12 systemctl start postfix
```

```
work > dngeneralov > vagrant > Vagrantfile
65
66     preserve_order: true,
67     path: "provision/server/firewall.sh"
68
69     server.vm.provision "server mail",
70     type: "shell",
71     preserve_order: true,
72     path: "provision/server/mail.sh"
73
74
75     server.vm.provider :virtualbox do |v|
76         v.linked_clone = true
77         # Customize the amount of memory on the VM
78         v.memory = 1024
79         v.cpus = 1
80         v.name = "server"
81
82
83
84
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90
91
92
93
94
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103
104
105
106
107
108
109
110
111     path: "provision/client/01-dummy.sh"
112
113     client.vm.provision "client routing",
114     type: "shell",
115     preserve_order: true,
116     run: "always",
117     path: "provision/client/01-routing.sh"
118
119     client.vm.provision "client mail",
120     type: "shell",
121     preserve_order: true,
122     path: "provision/client/mail.sh"
123
124
125     client.vm.provider :virtualbox do |v|
126         v.linked_clone = true
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Рис. 10: vagrant

Я получил опыт работы с настройкой SMTP-сервера Postfix.