Лабораторная работа

Номер 8

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01 января 1970

Российский университет дружбы народов, Москва, Россия

Информация

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Цель работы

Приобретение практических навыков по установке и конфигурированию SMTP-сервера

Установка Postfix

```
[root@server.dmmosharov.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_6  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

Установка s-nail

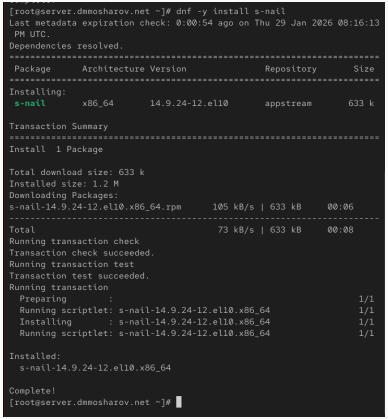

Рис. 2: Установка s-nail

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

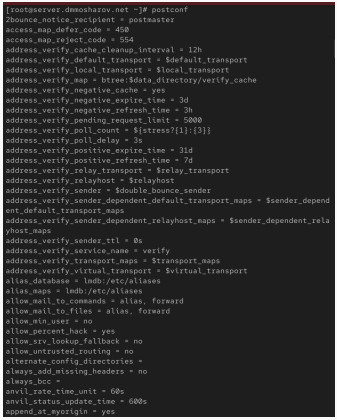

Рис. 4: postconf

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

postfix -n

```
[root@server.dmmosharov.net ~]# postconf -n
alias_database = lmdb:/etc/aliases
alias_maps = lmdb:/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 = lmdb
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_CApath = /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

Обновление настроек протоколов

```
[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

Отправка письма

Рис. 8: Отправка письма

Лог почты

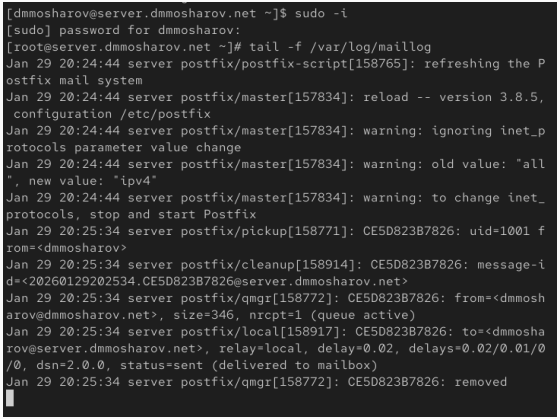

Рис. 9: Лог почты

/var/spool/mail

```
[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

Установка Postfix

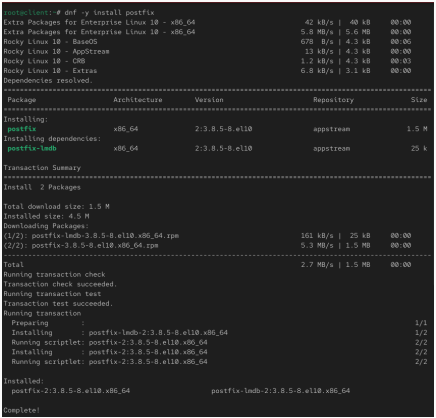

Рис. 11: Установка Postfix

установка s-nail

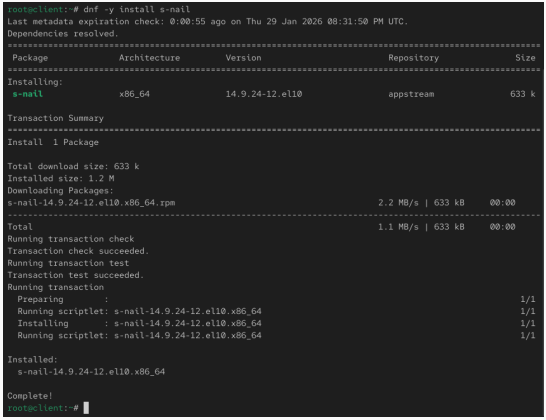

Рис. 12: установка s-nail

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

Отправка письма

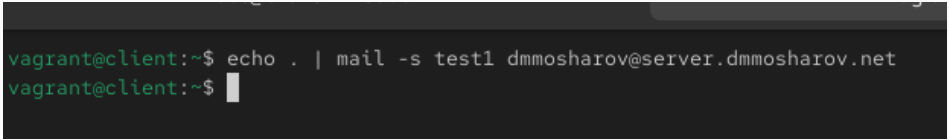

Рис. 14: Отправка письма

Логи почты

```
[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 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. 15: Логи почты

Включение получчения 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 получчения писем из локальной сети

Повторная отправка письма

```
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

Отправка письма пользователю

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

Рис. 19: Отправка письма пользователю

Неуспешная доставка письма

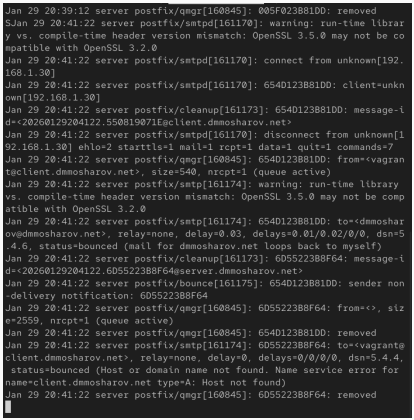

Рис. 20: Неуспешная доставка письма

postqueue -p

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

Рис. 21: postqueue -p

Файл прямой зоны

```
  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

Файл обратной зоны

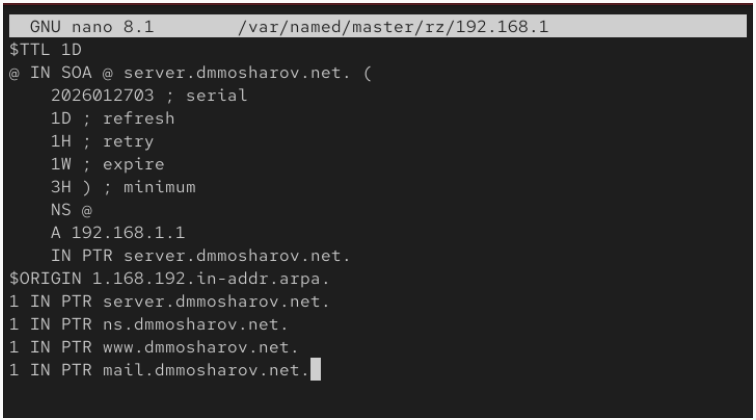

Рис. 23: Файл обратной зоны

Обновление списков назначения почты

```
[root@server.dmmosharov.net ~]# postconf -e 'mydestination = $myhostnam
e, localhost.$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 доставленом письме

Рис. 25: Лог об успешно доставленом 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

mail.sh

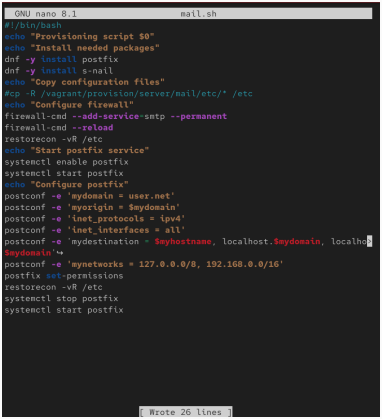

Рис. 27: mail.sh

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

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

```
    server.vm.provision "server mail",
                        type: "shell",
                        preserve_order: true,
                        path: "provision/server/mail.sh"

  end


  ## Client configuration
  config.vm.define "client", autostart: false do |client|
    client.vm.box = "rockylinux10"
    client.vm.hostname = 'client'

    client.vm.boot_timeout = 1440

    client.ssh.insert_key = false
    client.ssh.username = 'vagrant'
    client.ssh.password = 'vagrant'

    client.vm.network :private_network,
                      type: "dhcp",
                      virtualbox__intnet: true

    client.vm.provider :virtualbox do |virtualbox|
      virtualbox.customize ["modifyvm", :id, "--vrde", "on"]
      virtualbox.customize ["modifyvm", :id, "--vrdeport", "3392"]
    end

    client.vm.provision "client dummy",
                        type: "shell",
                        preserve_order: true,
                        path: "provision/client/01-dummy.sh"

    client.vm.provision "client routing",
                        type: "shell",
                        preserve_order: true,
                        run: "always",
                        path: "provision/client/01-routing.sh"
    client.vm.provision "client mail",
                        type: "shell",
                        preserve_order: true,
                        path: "provision/client/mail.sh"
  end
end
```

Рис. 30: vagrantfile

Выводы

В результате выполнения лабораторной работы были получены навыки настройки smtp сервера