

Лабораторная работа 8

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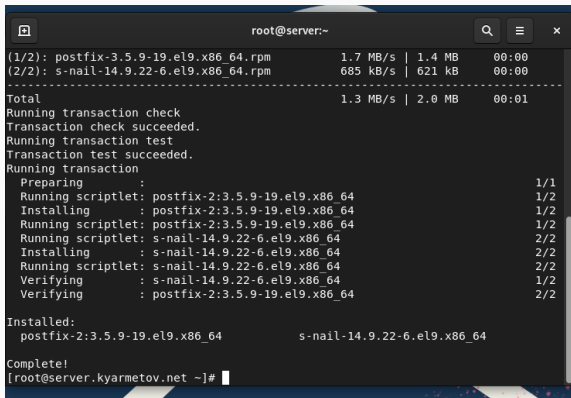
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Российский Университет Дружбы Народов

Цель лабораторной работы

Приобретение практических навыков по установке и конфигурированию SMTP-сервера.

Выполнение лабораторной работы



```
root@server:~  
(1/2): postfix-3.5.9-19.el9.x86_64.rpm      1.7 MB/s | 1.4 MB      00:00  
(2/2): s-nail-14.9.22-6.el9.x86_64.rpm     685 kB/s | 621 kB     00:00  
-----  
Total                                1.3 MB/s | 2.0 MB     00:01  
Running transaction check  
Transaction check succeeded.  
Running transaction test  
Transaction test succeeded.  
Running transaction  
  Preparing                               : 1/1  
  Running scriptlet: postfix-2:3.5.9-19.el9.x86_64 : 1/2  
  Installing        : postfix-2:3.5.9-19.el9.x86_64 : 1/2  
  Running scriptlet: postfix-2:3.5.9-19.el9.x86_64 : 1/2  
  Running scriptlet: s-nail-14.9.22-6.el9.x86_64   : 2/2  
  Installing        : s-nail-14.9.22-6.el9.x86_64   : 2/2  
  Running scriptlet: s-nail-14.9.22-6.el9.x86_64   : 2/2  
  Verifying         : s-nail-14.9.22-6.el9.x86_64   : 1/2  
  Verifying         : postfix-2:3.5.9-19.el9.x86_64 : 2/2  
  
Installed:  
 postfix-2:3.5.9-19.el9.x86_64      s-nail-14.9.22-6.el9.x86_64  
  
Complete!  
[root@server.kyarmetov.net ~]#
```

Figure 1: установка и запуск postfix

Конфигурация postfix

```
Complete!  
[root@server.kyarmetov.net ~]#  
[root@server.kyarmetov.net ~]# firewall-cmd --add-service=smtp  
success  
[root@server.kyarmetov.net ~]# firewall-cmd --add-service=smtp --permanent  
success  
[root@server.kyarmetov.net ~]# restorecon -vR /etc  
Relabeled /etc/sysconfig/network-scripts/ifcfg-eth1 from unconfined_u:object_r:u  
ser_tmp_t:s0 to unconfined_u:object_r:net_conf_t:s0  
[root@server.kyarmetov.net ~]# systemctl enable postfix  
Created symlink /etc/systemd/system/multi-user.target.wants/postfix.service → /u  
sr/lib/systemd/system/postfix.service.  
[root@server.kyarmetov.net ~]# systemctl start postfix  
[root@server.kyarmetov.net ~]#
```

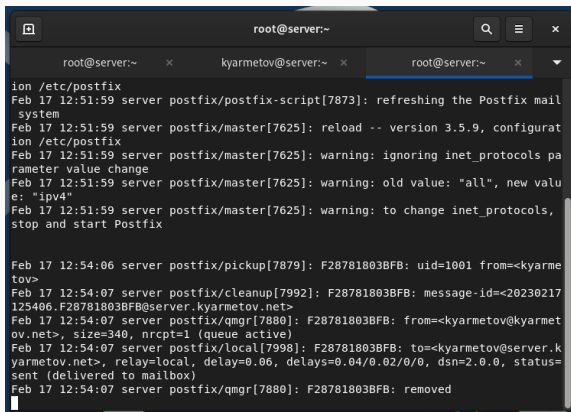
Figure 2: конфигурация postfix

Конфигурация postfix

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

Figure 3: конфигурация postfix

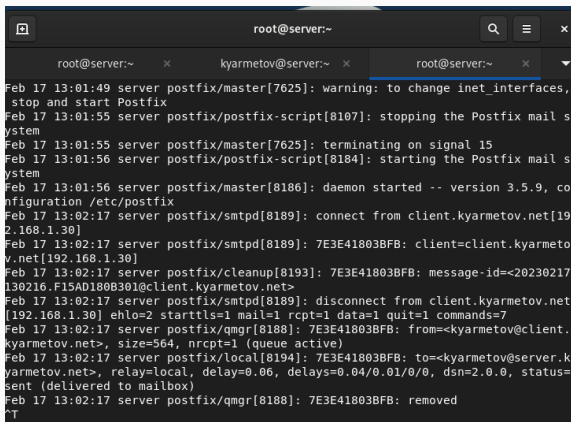
Проверка работы



```
root@server:~  
ion /etc/postfix  
Feb 17 12:51:59 server postfix/postfix-script[7873]: refreshing the Postfix mail  
system  
Feb 17 12:51:59 server postfix/master[7625]: reload -- version 3.5.9, configurat  
ion /etc/postfix  
Feb 17 12:51:59 server postfix/master[7625]: warning: ignoring inet_protocols pa  
rameter value change  
Feb 17 12:51:59 server postfix/master[7625]: warning: old value: "all", new valu  
e: "ipv4"  
Feb 17 12:51:59 server postfix/master[7625]: warning: to change inet_protocols,  
stop and start Postfix  
  
Feb 17 12:54:06 server postfix/pickup[7879]: F28781803BFB: uid=1001 from=<kyarme  
tov>  
Feb 17 12:54:07 server postfix/cleanup[7992]: F28781803BFB: message-id=<20230217  
125406.F28781803BFB@server.kyarmetov.net>  
Feb 17 12:54:07 server postfix/qmgr[7880]: F28781803BFB: from=<kyarmetov@kyarmet  
ov.net>, size=340, nrcpt=1 (queue active)  
Feb 17 12:54:07 server postfix/local[7998]: F28781803BFB: to=<kyarmetov@server.k  
yarmetov.net>, relay=local, delay=0.06, delays=0.04/0.02/0/0, dsn=2.0.0, status=  
sent (delivered to mailbox)  
Feb 17 12:54:07 server postfix/qmgr[7880]: F28781803BFB: removed
```

Figure 4: локальный прием письма

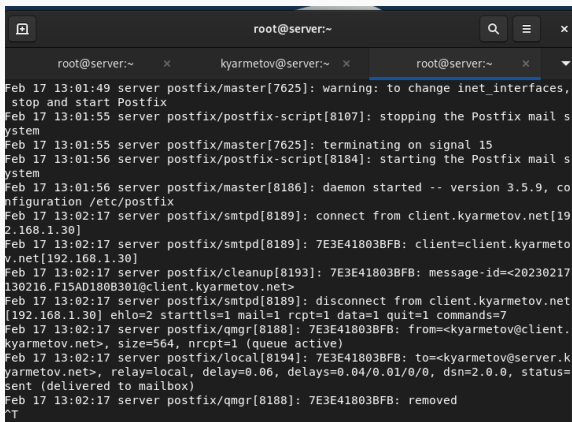
Конфигурация postfix

A terminal window titled 'root@server:~' with three tabs: 'root@server:~', 'kyarmetov@server:~', and 'root@server:~'. The active tab shows a series of log messages from the postfix mail system. The logs indicate a warning to change inet_interfaces, the stopping of the postfix mail system, the termination of the master process, the starting of the postfix mail system, the starting of the postfix daemon (version 3.5.9), a connection from client.kyarmetov.net, the processing of an email message, the disconnection from the client, and the removal of the message from the queue.

```
Feb 17 13:01:49 server postfix/master[7625]: warning: to change inet_interfaces,
stop and start Postfix
Feb 17 13:01:55 server postfix/postfix-script[8107]: stopping the Postfix mail s
ystem
Feb 17 13:01:55 server postfix/master[7625]: terminating on signal 15
Feb 17 13:01:56 server postfix/postfix-script[8184]: starting the Postfix mail s
ystem
Feb 17 13:01:56 server postfix/master[8186]: daemon started -- version 3.5.9, co
nfiguration /etc/postfix
Feb 17 13:02:17 server postfix/smtpd[8189]: connect from client.kyarmetov.net[19
2.168.1.30]
Feb 17 13:02:17 server postfix/smtpd[8189]: 7E3E41803BFB: client=client.kyarmeto
v.net[192.168.1.30]
Feb 17 13:02:17 server postfix/cleanup[8193]: 7E3E41803BFB: message-id=<20230217
130216.F15AD180B301@client.kyarmetov.net>
Feb 17 13:02:17 server postfix/smtpd[8189]: disconnect from client.kyarmetov.net
[192.168.1.30] ehlo=2 starttls=1 mail=1 rcpt=1 data=1 quit=1 commands=7
Feb 17 13:02:17 server postfix/qmgr[8188]: 7E3E41803BFB: from=<kyarmetov@client.
kyarmetov.net>, size=564, nrcpt=1 (queue active)
Feb 17 13:02:17 server postfix/local[8194]: 7E3E41803BFB: to=<kyarmetov@server.k
yarmetov.net>, relay=local, delay=0.06, delays=0.04/0.01/0/0, dsn=2.0.0, status=
sent (delivered to mailbox)
Feb 17 13:02:17 server postfix/qmgr[8188]: 7E3E41803BFB: removed
^T
```

Figure 5: конфигурация postfix

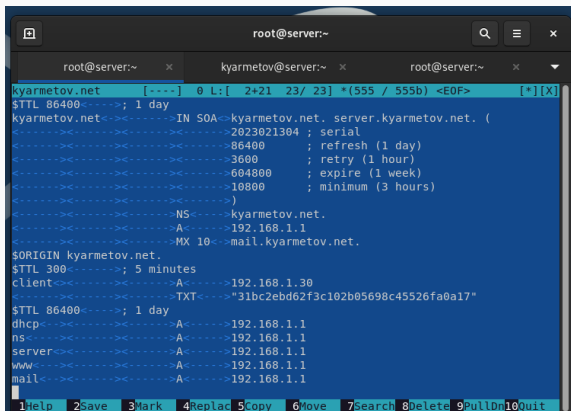
Проверка работы



```
root@server:~
Feb 17 13:01:49 server postfix/master[7625]: warning: to change inet_interfaces, stop and start Postfix
Feb 17 13:01:55 server postfix/postfix-script[8107]: stopping the Postfix mail system
Feb 17 13:01:55 server postfix/master[7625]: terminating on signal 15
Feb 17 13:01:56 server postfix/postfix-script[8184]: starting the Postfix mail system
Feb 17 13:01:56 server postfix/master[8186]: daemon started -- version 3.5.9, configuration /etc/postfix
Feb 17 13:02:17 server postfix/smtpd[8189]: connect from client.kyarmetov.net[192.168.1.30]
Feb 17 13:02:17 server postfix/smtpd[8189]: 7E3E41803BFB: client=client.kyarmetov.net[192.168.1.30]
Feb 17 13:02:17 server postfix/cleanup[8193]: 7E3E41803BFB: message-id=<20230217130216.F15AD180B301@client.kyarmetov.net>
Feb 17 13:02:17 server postfix/smtpd[8189]: disconnect from client.kyarmetov.net[192.168.1.30] ehlo=2 starttls=1 mail=1 rcpt=1 data=1 quit=1 commands=7
Feb 17 13:02:17 server postfix/qmgr[8188]: 7E3E41803BFB: from=<kyarmetov@client.kyarmetov.net>, size=564, nrcpt=1 (queue active)
Feb 17 13:02:17 server postfix/local[8194]: 7E3E41803BFB: to=<kyarmetov@server.kyarmetov.net>, relay=local, delay=0.06, delays=0.04/0.01/0/0, dsn=2.0.0, status=sent (delivered to mailbox)
Feb 17 13:02:17 server postfix/qmgr[8188]: 7E3E41803BFB: removed
^T
```

Figure 6: прием письма с клиента

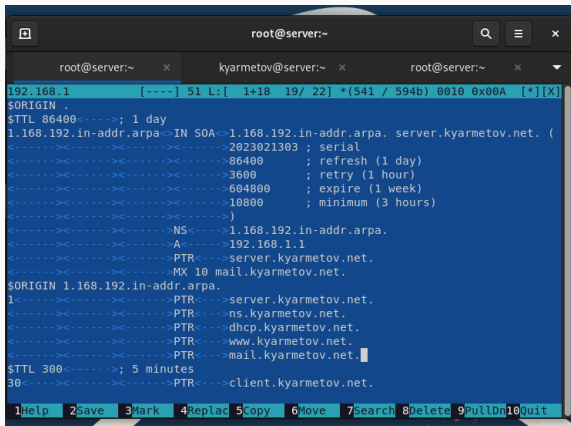
Настройка DNS



```
root@server:~  
kyarmetov.net [----] 0 L: [ 2+21 23/ 23] *(555 / 555b) <E0F> [*][X]  
$TTL 86400-----; 1 day  
kyarmetov.net<----->IN SOA<----->kyarmetov.net. server.kyarmetov.net. (  
<-----><-----><-----><----->2023021304 ; serial  
<-----><-----><-----><----->86400 ; refresh (1 day)  
<-----><-----><-----><----->3600 ; retry (1 hour)  
<-----><-----><-----><----->604800 ; expire (1 week)  
<-----><-----><-----><----->10800 ; minimum (3 hours)  
<-----><-----><-----><----->)  
<-----><-----><-----><----->NS<----->kyarmetov.net.  
<-----><-----><-----><----->A<----->192.168.1.1  
<-----><-----><-----><----->MX 10<----->mail.kyarmetov.net.  
$ORIGIN kyarmetov.net.  
$TTL 300<----->5 minutes  
client<----->A<----->192.168.1.30  
<-----><-----><-----><----->TXT<----->"31bc2ebd62f3c102b05698c45526fa0a17"  
$TTL 86400-----; 1 day  
dhcp<-----><----->A<----->192.168.1.1  
ns<-----><----->A<----->192.168.1.1  
server<-----><----->A<----->192.168.1.1  
www<-----><----->A<----->192.168.1.1  
mail<-----><----->A<----->192.168.1.1  
1help 2Save 3Mark 4Replac 5Copy 6Move 7Search 8Delete 9PullDn10Quit
```

Figure 7: файл прямой зоны

Настройка DNS



```
root@server:~  
192.168.1.1 [----] 51 L: [ 1+18 19/ 22] *(541 / 594b) 0010 0x00A [*][X]  
$ORIGIN .  
$TTL 86400<----->; 1 day  
1.168.192.in-addr.arpa<--IN SOA<--1.168.192.in-addr.arpa. server.kyarmetov.net. (  
<-----><-----><-----><-----><----->2023021303 ; 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.kyarmetov.net.  
<-----><-----><-----><-----><----->MX 10 mail.kyarmetov.net.  
$ORIGIN 1.168.192.in-addr.arpa.  
1<-----><-----><-----><-----><----->PTR<----->server.kyarmetov.net.  
<-----><-----><-----><-----><----->PTR<----->ns.kyarmetov.net.  
<-----><-----><-----><-----><----->PTR<----->dhcp.kyarmetov.net.  
<-----><-----><-----><-----><----->PTR<----->www.kyarmetov.net.  
<-----><-----><-----><-----><----->PTR<----->mail.kyarmetov.net.  
$TTL 300<----->; 5 minutes  
30<-----><-----><-----><-----><----->PTR<----->client.kyarmetov.net.  
1Help 2Save 3Mark 4Replac 5Copy 6Move 7Search 8Delete 9PullDn10Quit
```

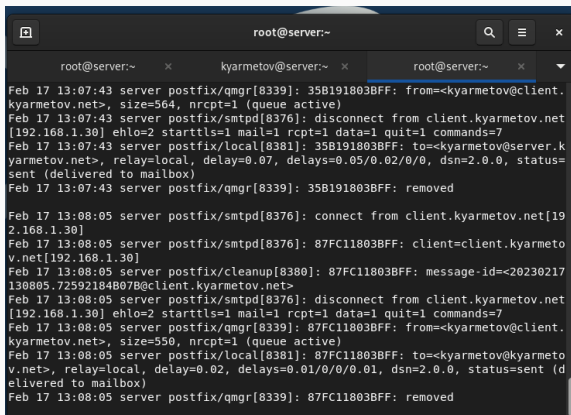
Figure 8: файл обратной зоны

Конфигурация postfix

```
[root@server.kyarmetov.net ~]#  
[root@server.kyarmetov.net ~]#  
[root@server.kyarmetov.net ~]# mcedit /var/named/master/fz/kyarmetov.net  
  
[root@server.kyarmetov.net ~]# mcedit /var/named/master/rz/192.168.1  
  
[root@server.kyarmetov.net ~]#  
[root@server.kyarmetov.net ~]#  
[root@server.kyarmetov.net ~]# postconf -e 'mydestination = $myhostname, localho  
st.$mydomain, localhost, $mydomain'  
[root@server.kyarmetov.net ~]# systemctl reload postfix.service  
[root@server.kyarmetov.net ~]# restorecon -vR /etc  
[root@server.kyarmetov.net ~]# restorecon -vR /var/named/  
[root@server.kyarmetov.net ~]#  
[root@server.kyarmetov.net ~]# systemctl restart named  
[root@server.kyarmetov.net ~]#
```

Figure 9: конфигурация postfix для домена

Проверка работы



The image shows a terminal window titled 'root@server:~'. The terminal displays a series of log messages from postfix, indicating the receipt and processing of an email. The messages include details about the sender (kyarmetov@client.kyarmetov.net), the recipient (kyarmetov@server.kyarmetov.net), the message size (550 bytes), and the status (sent and delivered to mailbox). The terminal also shows the removal of the message from the queue.

```
Feb 17 13:07:43 server postfix/qmgr[8339]: 35B191803BFF: from=<kyarmetov@client.kyarmetov.net>, size=564, nrcpt=1 (queue active)
Feb 17 13:07:43 server postfix/smtpd[8376]: disconnect from client.kyarmetov.net [192.168.1.30] ehlo=2 starttls=1 mail=1 rcpt=1 data=1 quit=1 commands=7
Feb 17 13:07:43 server postfix/local[8381]: 35B191803BFF: to=<kyarmetov@server.kyarmetov.net>, relay=local, delay=0.07, delays=0.05/0.02/0/0, dsn=2.0.0, status=sent (delivered to mailbox)
Feb 17 13:07:43 server postfix/qmgr[8339]: 35B191803BFF: removed

Feb 17 13:08:05 server postfix/smtpd[8376]: connect from client.kyarmetov.net[192.168.1.30]
Feb 17 13:08:05 server postfix/smtpd[8376]: 87FC11803BFF: client=client.kyarmetov.net[192.168.1.30]
Feb 17 13:08:05 server postfix/cleanup[8380]: 87FC11803BFF: message-id=<20230217130805.72592184807B@client.kyarmetov.net>
Feb 17 13:08:05 server postfix/smtpd[8376]: disconnect from client.kyarmetov.net [192.168.1.30] ehlo=2 starttls=1 mail=1 rcpt=1 data=1 quit=1 commands=7
Feb 17 13:08:05 server postfix/qmgr[8339]: 87FC11803BFF: from=<kyarmetov@client.kyarmetov.net>, size=550, nrcpt=1 (queue active)
Feb 17 13:08:05 server postfix/local[8381]: 87FC11803BFF: to=<kyarmetov@kyarmetov.net>, relay=local, delay=0.02, delays=0.01/0/0/0.01, dsn=2.0.0, status=sent (delivered to mailbox)
Feb 17 13:08:05 server postfix/qmgr[8339]: 87FC11803BFF: removed
```

Figure 10: прием письма с клиента

Приобретены практические навыки по установке и конфигурированию SMTP-сервера.