

Презентация по лабораторной работе №8

Настройка SMTP-сервера

Галацан Николай

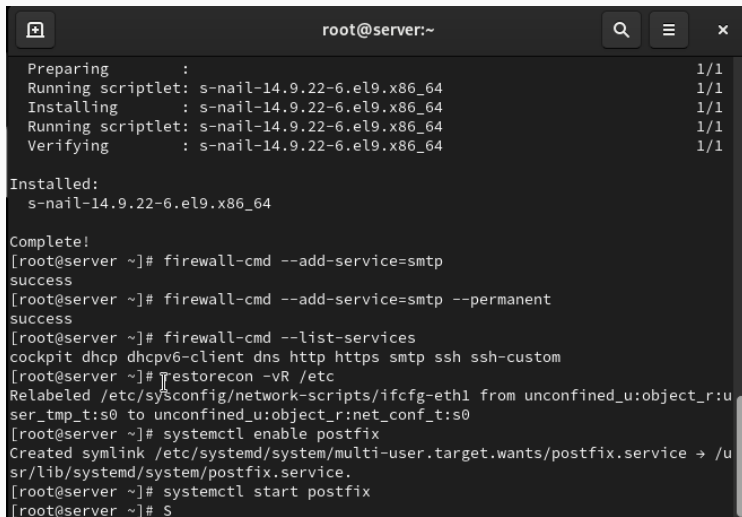
Российский университет дружбы народов, Москва, Россия

- Галацан Николай
- 1032225763
- уч. группа: НПИбд-01-22
- Факультет физико-математических и естественных наук
- Российский университет дружбы народов

Приобретение практических навыков по установке и конфигурированию SMTP-сервера.

Установка Postfix

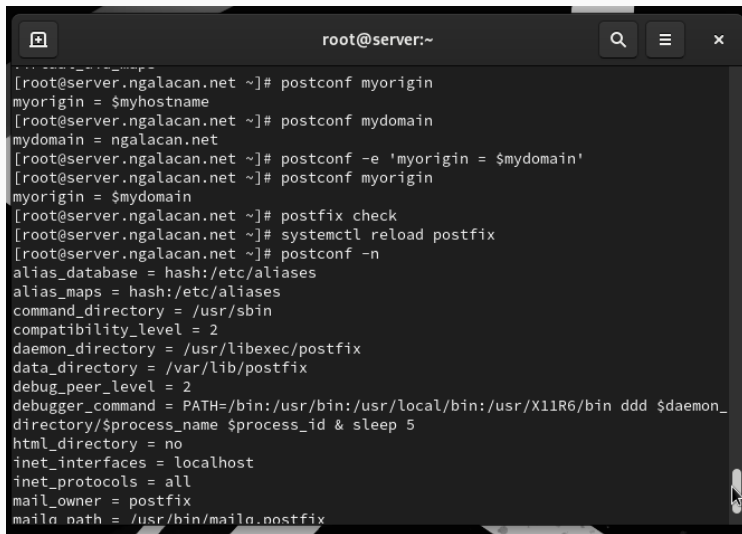
Выполнение лабораторной работы



```
root@server:~  
Preparing      :                               1/1  
Running scriptlet: s-nail-14.9.22-6.el9.x86_64 1/1  
Installing      : s-nail-14.9.22-6.el9.x86_64 1/1  
Running scriptlet: s-nail-14.9.22-6.el9.x86_64 1/1  
Verifying       : s-nail-14.9.22-6.el9.x86_64 1/1  
  
Installed:  
  s-nail-14.9.22-6.el9.x86_64  
  
Complete!  
[root@server ~]# firewall-cmd --add-service=smtp  
success  
[root@server ~]# firewall-cmd --add-service=smtp --permanent  
success  
[root@server ~]# firewall-cmd --list-services  
cockpit dhcp dhcpv6-client dns http https smtp ssh ssh-custom  
[root@server ~]# 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 ~]# systemctl enable postfix  
Created symlink /etc/systemd/system/multi-user.target.wants/postfix.service → /u  
sr/lib/systemd/system/postfix.service.  
[root@server ~]# systemctl start postfix  
[root@server ~]# S
```

Рис. 1: Конфигурация межсетевых экранов, восстановление контекста безопасности, запуск Postfix

Изменение параметров Postfix с помощью postconf



A terminal window titled 'root@server:~' with search, menu, and close icons in the title bar. The terminal shows a series of commands to configure postfix. The first part sets 'myorigin' and 'mydomain' to the current hostname and domain. The second part shows the output of 'postfix check', which lists various postfix configuration parameters and their values.

```
root@server:~  
[root@server.ngalacan.net ~]# postconf myorigin  
myorigin = $myhostname  
[root@server.ngalacan.net ~]# postconf mydomain  
mydomain = ngalacan.net  
[root@server.ngalacan.net ~]# postconf -e 'myorigin = $mydomain'  
[root@server.ngalacan.net ~]# postconf myorigin  
myorigin = $mydomain  
[root@server.ngalacan.net ~]# postfix check  
[root@server.ngalacan.net ~]# systemctl reload postfix  
[root@server.ngalacan.net ~]# 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 ddd $daemon_  
directory/$process_name $process_id & sleep 5  
html_directory = no  
inet_interfaces = localhost  
inet_protocols = all  
mail_owner = postfix  
mailq_path = /usr/bin/mailq.postfix
```

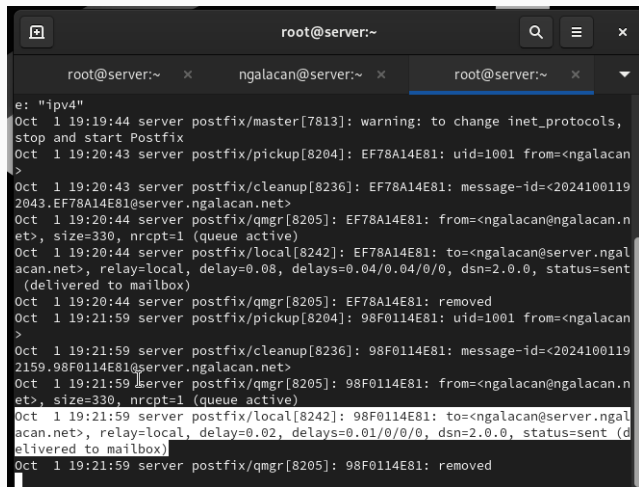
Рис. 2: Изменение параметров с помощью postconf

```
unknown_local_recipient_reject_code = 550  
[root@server.ngalacan.net ~]# postconf -e 'mydomain = ngalacan.net'  
[root@server.ngalacan.net ~]# postconf inet_protocols  
inet_protocols = all  
[root@server.ngalacan.net ~]# postconf -e 'inet_protocols = ipv4'  
[root@server.ngalacan.net ~]# postfix check  
[root@server.ngalacan.net ~]# systemctl reload postfix  
[root@server.ngalacan.net ~]#
```

Рис. 3: Задание домена, изменение списка разрешенных протоколов

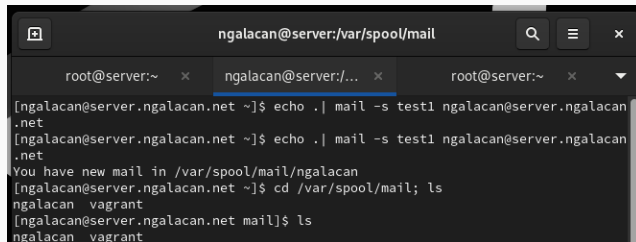
Проверка работы Postfix

```
echo .| mail -s test1 ngalacan@server.ngalacan.net
```



```
root@server:~
e: "ipv4"
Oct 1 19:19:44 server postfix/master[7813]: warning: to change inet_protocols,
stop and start Postfix
Oct 1 19:20:43 server postfix/pickup[8204]: EF78A14E81: uid=1001 from=<ngalacan
>
Oct 1 19:20:43 server postfix/cleanup[8236]: EF78A14E81: message-id=<2024100119
2043.EF78A14E81@server.ngalacan.net>
Oct 1 19:20:44 server postfix/qmgr[8205]: EF78A14E81: from=<ngalacan@ngalacan.n
et>, size=330, nrcpt=1 (queue active)
Oct 1 19:20:44 server postfix/local[8242]: EF78A14E81: to=<ngalacan@server.ngal
acan.net>, relay=local, delay=0.08, delays=0.04/0.04/0/0, dsn=2.0.0, status=sent
(delivered to mailbox)
Oct 1 19:20:44 server postfix/qmgr[8205]: EF78A14E81: removed
Oct 1 19:21:59 server postfix/pickup[8204]: 98F0114E81: uid=1001 from=<ngalacan
>
Oct 1 19:21:59 server postfix/cleanup[8236]: 98F0114E81: message-id=<2024100119
2159.98F0114E81@server.ngalacan.net>
Oct 1 19:21:59 server postfix/qmgr[8205]: 98F0114E81: from=<ngalacan@ngalacan.n
et>, size=330, nrcpt=1 (queue active)
Oct 1 19:21:59 server postfix/local[8242]: 98F0114E81: to=<ngalacan@server.ngal
acan.net>, relay=local, delay=0.02, delays=0.01/0/0/0, dsn=2.0.0, status=sent (d
elivered to mailbox)
Oct 1 19:21:59 server postfix/qmgr[8205]: 98F0114E81: removed
```

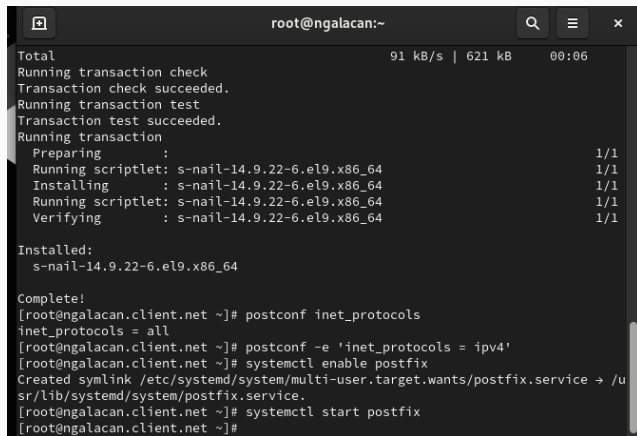
Рис. 4: Мониторинг работы почтовой службы: письмо доставлено



The image shows a terminal window with a dark theme. The title bar at the top reads 'ngalacan@server:/var/spool/mail'. Below the title bar, there are three tabs: 'root@server:~', 'ngalacan@server:/...' (which is selected and highlighted with a blue underline), and 'root@server:~'. The terminal content shows the following sequence of commands and output:

```
[ngalacan@server.ngalacan.net ~]$ echo . | mail -s test1 ngalacan@server.ngalacan.net
[ngalacan@server.ngalacan.net ~]$ echo . | mail -s test1 ngalacan@server.ngalacan.net
You have new mail in /var/spool/mail/ngalacan
[ngalacan@server.ngalacan.net ~]$ cd /var/spool/mail; ls
ngalacan  vagrant
[ngalacan@server.ngalacan.net mail]$ ls
ngalacan  vagrant
```

Рис. 5: Проверка /var/spool/mail



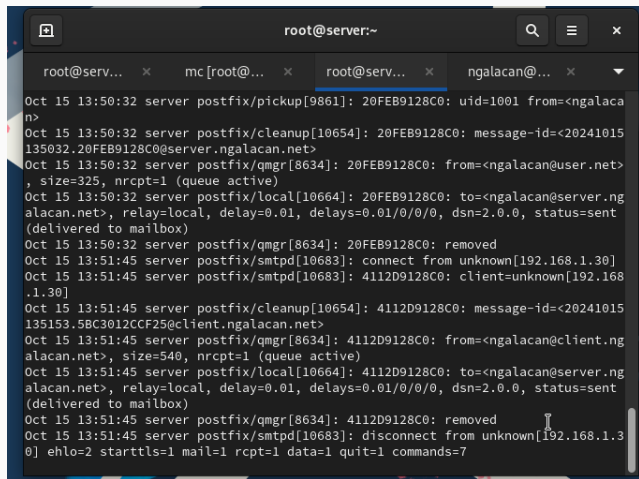
```
root@ngalacan:~
Total 91 kB/s | 621 kB 00:06
Running transaction check
Transaction check succeeded.
Running transaction test
Transaction test succeeded.
Running transaction
  Preparing      : 1/1
  Running scriptlet: s-nail-14.9.22-6.el9.x86_64 1/1
  Installing      : s-nail-14.9.22-6.el9.x86_64 1/1
  Running scriptlet: s-nail-14.9.22-6.el9.x86_64 1/1
  Verifying       : s-nail-14.9.22-6.el9.x86_64 1/1

Installed:
s-nail-14.9.22-6.el9.x86_64

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

Рис. 6: Установка пакетов, изменение разрешенных в работе протоколов, запуск Postfix на клиенте

Выполнение лабораторной работы



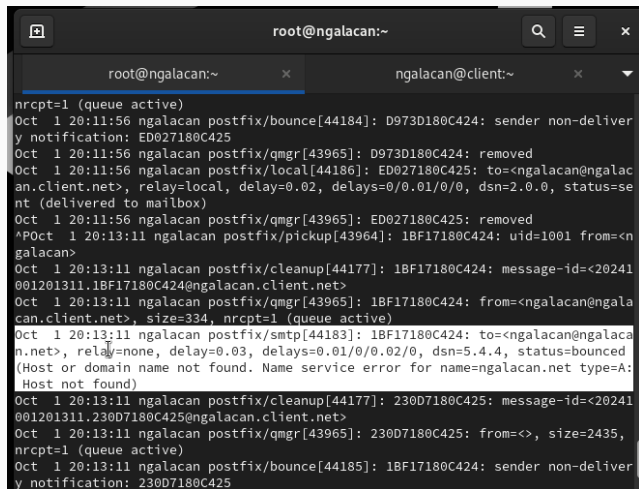
The screenshot shows a terminal window titled 'root@server:~' with a search icon, a menu icon, and a close button. The terminal displays a series of log messages from the Postfix mail service. The logs show the processing of an email from 'ngalacan' at 13:50:32, including pickup, cleanup, and local delivery. At 13:51:45, a new email is received from 'ngalacan@client.ngalacan.net', which is also processed through pickup, cleanup, and local delivery. The terminal window has several tabs at the top: 'root@serv...', 'mc [root@...', 'root@serv...' (which is active), and 'ngalacan@...'. The log messages are as follows:

```
Oct 15 13:50:32 server postfix/pickup[9861]: 20FEB9128C0: uid=1001 from=<ngalacan>
Oct 15 13:50:32 server postfix/cleanup[10654]: 20FEB9128C0: message-id=<20241015135032.20FEB9128C0@server.ngalacan.net>
Oct 15 13:50:32 server postfix/qmgr[8634]: 20FEB9128C0: from=<ngalacan@user.net>, size=325, nrcpt=1 (queue active)
Oct 15 13:50:32 server postfix/local[10664]: 20FEB9128C0: to=<ngalacan@server.ngalacan.net>, relay=local, delay=0.01, delays=0.01/0/0/0, dsn=2.0.0, status=sent (delivered to mailbox)
Oct 15 13:50:32 server postfix/qmgr[8634]: 20FEB9128C0: removed
Oct 15 13:51:45 server postfix/smtpd[10683]: connect from unknown[192.168.1.30]
Oct 15 13:51:45 server postfix/smtpd[10683]: 4112D9128C0: client=unknown[192.168.1.30]
Oct 15 13:51:45 server postfix/cleanup[10654]: 4112D9128C0: message-id=<20241015135153.5BC3012CCF25@client.ngalacan.net>
Oct 15 13:51:45 server postfix/qmgr[8634]: 4112D9128C0: from=<ngalacan@client.ngalacan.net>, size=540, nrcpt=1 (queue active)
Oct 15 13:51:45 server postfix/local[10664]: 4112D9128C0: to=<ngalacan@server.ngalacan.net>, relay=local, delay=0.01, delays=0.01/0/0/0, dsn=2.0.0, status=sent (delivered to mailbox)
Oct 15 13:51:45 server postfix/qmgr[8634]: 4112D9128C0: removed
Oct 15 13:51:45 server postfix/smtpd[10683]: disconnect from unknown[192.168.1.30] ehlo=2 starttls=1 mail=1 rcpt=1 data=1 quit=1 commands=7
```

Рис. 7: Мониторинг работы почтовой службы после изменения конфигурации Postfix

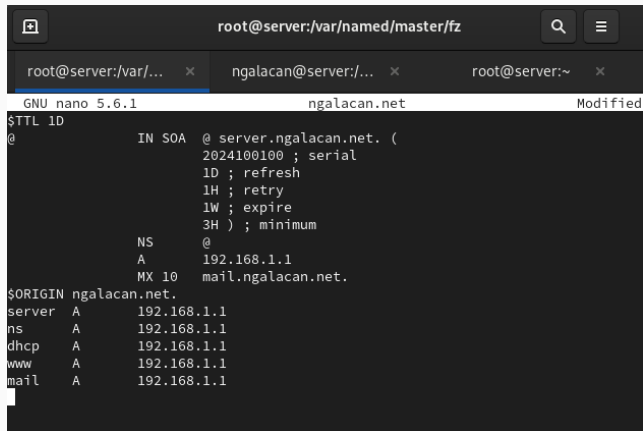
Конфигурация Postfix для домена

```
echo .| mail -s test2 ngalacan@ngalacan.net
```

```
root@ngalacan:~
nrcpt=1 (queue active)
Oct 1 20:11:56 ngalacan postfix/bounce[44184]: D973D180C424: sender non-delivery notification: ED027180C425
Oct 1 20:11:56 ngalacan postfix/qmgr[43965]: D973D180C424: removed
Oct 1 20:11:56 ngalacan postfix/local[44186]: ED027180C425: to=<ngalacan@ngalacan.client.net>, relay=local, delay=0.02, delays=0/0.01/0/0, dsn=2.0.0, status=sent (delivered to mailbox)
Oct 1 20:11:56 ngalacan postfix/qmgr[43965]: ED027180C425: removed
^POct 1 20:13:11 ngalacan postfix/pickup[43964]: 1BF17180C424: uid=1001 from=<ngalacan>
Oct 1 20:13:11 ngalacan postfix/cleanup[44177]: 1BF17180C424: message-id=<20241001201311.1BF17180C424@ngalacan.client.net>
Oct 1 20:13:11 ngalacan postfix/qmgr[43965]: 1BF17180C424: from=<ngalacan@ngalacan.client.net>, size=334, nrcpt=1 (queue active)
Oct 1 20:13:11 ngalacan postfix/smtp[44183]: 1BF17180C424: to=<ngalacan@ngalacan.net>, relay=none, delay=0.03, delays=0.01/0/0.02/0, dsn=5.4.4, status=bounced (Host or domain name not found. Name service error for name=ngalacan.net type=A: Host not found)
Oct 1 20:13:11 ngalacan postfix/cleanup[44177]: 230D7180C425: message-id=<20241001201311.230D7180C425@ngalacan.client.net>
Oct 1 20:13:11 ngalacan postfix/qmgr[43965]: 230D7180C425: from=<>, size=2435, nrcpt=1 (queue active)
Oct 1 20:13:11 ngalacan postfix/bounce[44185]: 1BF17180C424: sender non-delivery notification: 230D7180C425
```

Рис. 8: Мониторинг работы почтовой службы: сообщение не доставлено

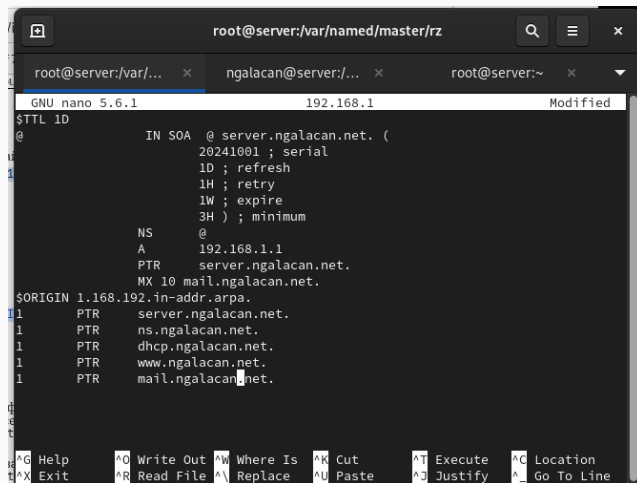


The screenshot shows a terminal window with a dark background. At the top, the title bar indicates the user is root at a server, in the directory /var/named/master/fz. Below the title bar, there are three tabs: root@server:/var/..., ngalacan@server:/..., and root@server:~. The main content of the terminal is a nano editor session editing a file named ngalacan.net. The editor shows the following content:

```
GNU nano 5.6.1 ngalacan.net Modified
$TTL 1D
@           IN SOA  @ server.ngalacan.net. (
                2024100100 ; serial
                1D ; refresh
                1H ; retry
                1W ; expire
                3H ) ; minimum
                NS      @
                A       192.168.1.1
                MX 10   mail.ngalacan.net.
$ORIGIN ngalacan.net.
server A       192.168.1.1
ns      A       192.168.1.1
dhcp    A       192.168.1.1
www     A       192.168.1.1
mail    A       192.168.1.1
```

Рис. 9: Изменение файла прямой DNS-зоны

Выполнение лабораторной работы



The screenshot shows a terminal window with a dark theme. The title bar indicates the user is root at a server, in the directory /var/named/master/rz. There are three tabs open: root@server:/var/..., ngalacan@server:/..., and root@server:~. The active tab is the first one. The editor is GNU nano 5.6.1, editing a file named 192.168.1. The status bar at the top right says 'Modified'. The content of the file is a reverse DNS zone file for 192.168.1. It starts with \$TTL 1D and an IN SOA record for server.ngalacan.net. with serial 20241001. It includes NS, A, PTR, and MX records. The \$ORIGIN is set to 1.168.192.in-addr.arpa. There are five PTR records for the addresses 1, 1, 1, 1, and 1 in the 192.168.1.0/24 network. The bottom of the screen shows nano editor shortcuts: ^G Help, ^O Write Out, ^W Where Is, ^K Cut, ^T Execute, ^C Location, ^X Exit, ^R Read File, ^_ Replace, ^U Paste, ^J Justify, and ^_ Go To Line.

```
root@server:/var/named/master/rz
GNU nano 5.6.1 192.168.1 Modified
$TTL 1D
@           IN SOA  @ server.ngalacan.net. (
                20241001 ; serial
                1D ; refresh
                1H ; retry
                1W ; expire
                3H ) ; minimum
        NS      @
        A       192.168.1.1
        PTR     server.ngalacan.net.
        MX 10   mail.ngalacan.net.
$ORIGIN 1.168.192.in-addr.arpa.
1       PTR     server.ngalacan.net.
1       PTR     ns.ngalacan.net.
1       PTR     dhcp.ngalacan.net.
1       PTR     www.ngalacan.net.
1       PTR     mail.ngalacan.net.

^G Help      ^O Write Out ^W Where Is  ^K Cut       ^T Execute   ^C Location
^X Exit      ^R Read File ^_ Replace   ^U Paste     ^J Justify   ^_ Go To Line
```

Рис. 10: Изменение файла обратной DNS-зоны

```
Oct 15 14:59:26 client postfix/cleanup[9585]: E92CE12CCF25: message-id=<20241015  
145926.E92CE12CCF25@client.ngalacan.net>  
Oct 15 14:59:26 client postfix/qmgr[1231]: E92CE12CCF25: from=<ngalacan@client.n  
galacan.net>, size=334, nrcpt=1 (queue active)  
Oct 15 14:59:27 client postfix/local[9591]: E92CE12CCF25: to=<ngalacan@ngalacan.  
net>, relay=local, delay=0.08, delays=0.05/0.02/0/0, dsn=2.0.0, status=sent (del  
ivered to mailbox)  
Oct 15 14:59:27 client postfix/qmgr[1231]: E92CE12CCF25: removed
```

Рис. 11: Мониторинг работы почтовой службы: сообщение на доменный адрес доставлено

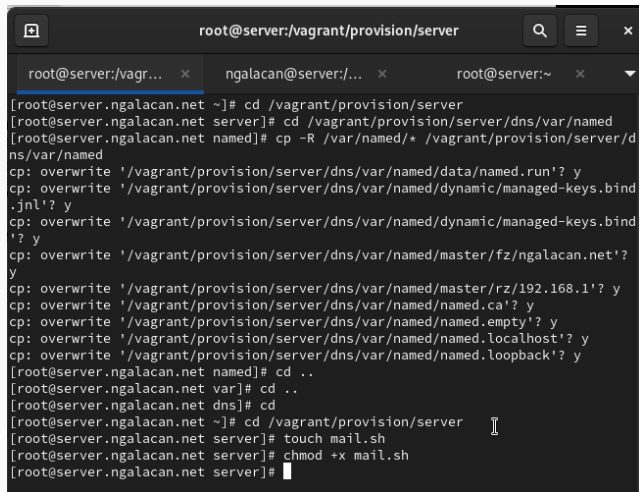
```
Return-Path: <ngalacan@user.net>
Received: by server.ngalacan.net (Postfix, from userid 1001)
        id 549499128C0; Tue, 15 Oct 2024 14:59:47 +0000 (UTC)
Date: Tue, 15 Oct 2024 14:59:47 +0000
To: ngalacan@sngalacan.net
Subject: 12
User-Agent: s-nail v14.9.22
Message-Id: <20241015145947.549499128C0@server.ngalacan.net>
From: ngalacan@user.net

.

--549499128C0.1729004761/server.ngalacan.net--
```

Рис. 12: Сообщение на доменный адрес в /var/spool/mail/ngalacan

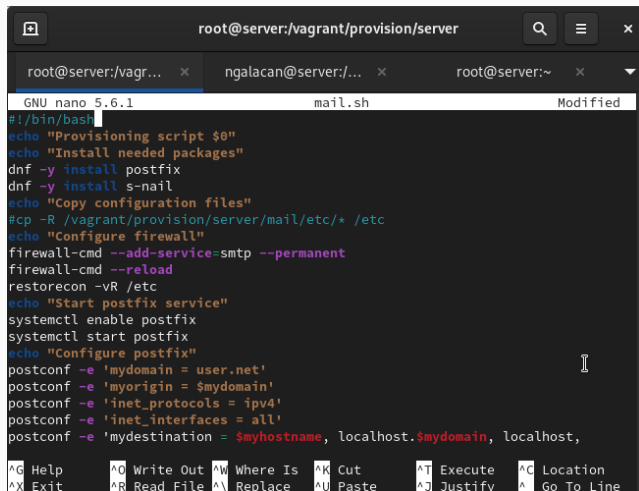
Внесение изменений в настройки
внутреннего окружения
виртуальной машины

A terminal window with a dark background and light text. The title bar shows 'root@server:/vagrant/provision/server'. There are three tabs: 'root@server:/vagr...', 'ngalacan@server:/...', and 'root@server:~'. The terminal content shows a series of commands and their outputs for configuring a DNS server. The commands include navigating to the directory, copying files from /var/named, and overwriting specific files like named.run, managed-keys.bind, and various zone files. The process ends with creating a mail.sh file and setting its permissions.

```
root@server:/vagrant/provision/server

[root@server.ngalacan.net ~]# cd /vagrant/provision/server
[root@server.ngalacan.net server]# cd /vagrant/provision/server/dns/var/named
[root@server.ngalacan.net named]# cp -R /var/named/* /vagrant/provision/server/dns/var/named
cp: overwrite '/vagrant/provision/server/dns/var/named/data/named.run'? y
cp: overwrite '/vagrant/provision/server/dns/var/named/dynamic/managed-keys.bind.jnl'? y
cp: overwrite '/vagrant/provision/server/dns/var/named/dynamic/managed-keys.bind'? y
cp: overwrite '/vagrant/provision/server/dns/var/named/master/fz/ngalacan.net'? 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.ngalacan.net named]# cd ..
[root@server.ngalacan.net var]# cd ..
[root@server.ngalacan.net dns]# cd
[root@server.ngalacan.net ~]# cd /vagrant/provision/server
[root@server.ngalacan.net server]# touch mail.sh
[root@server.ngalacan.net server]# chmod +x mail.sh
[root@server.ngalacan.net server]#
```

Рис. 13: Замена конф. файлов DNS-сервера, создание mail.sh



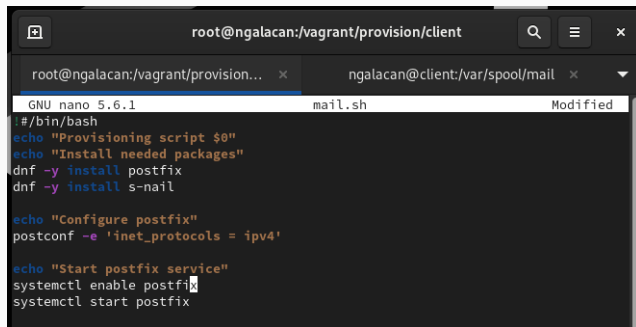
The screenshot shows a terminal window with the title bar "root@server:/vagrant/provision/server". There are three tabs open: "root@server:/vagr...", "ngalacan@server:/...", and "root@server:~". The active tab is "root@server:/vagr...", which displays the contents of a file named "mail.sh" in the nano 5.6.1 editor. The script content is as follows:

```
#!/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,
```

At the bottom of the terminal, a keyboard shortcuts menu is visible:

^G Help	^O Write Out	^W Where Is	^K Cut	^T Execute	^C Location
^X Exit	^R Read File	^\ Replace	^U Paste	^J Justify	^_ Go To Line

Рис. 14: Создание скрипта mail.sh на сервере



The screenshot shows a terminal window with a dark theme. The title bar indicates the user is root@ngalacan in the directory /vagrant/provision/client. There are two tabs open: 'root@ngalacan:/vagrant/provision...' and 'ngalacan@client:/var/spool/mail'. The active tab shows a nano editor editing 'mail.sh'. The script content is as follows:

```
GNU nano 5.6.1 mail.sh Modified
#!/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. 15: Создание скрипта mail.sh на клиенте

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

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

Выводы

В результате выполнения работы были приобретены практические навыки по установке и конфигурированию SMTP-сервера.