

ОТЧЕТ ЛАБОРАТОРНОЙ РАБОТЫ 2

ДИСЦИПЛИНА:
АДМИНИСТРИРОВАНИЕ СЕТЕВЫХ
ПОДСИСТЕМ

Астахова Марина

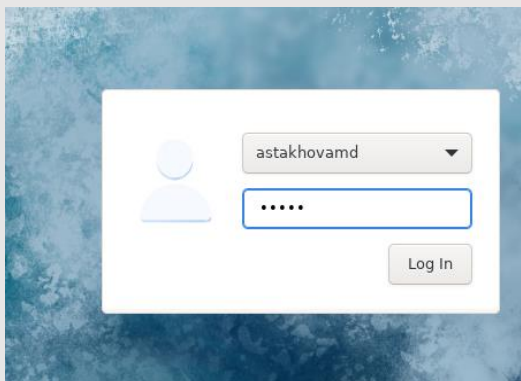
НПИбд-02-23

ТЕМА: НАСТРОЙКА DNS-СЕРВЕРА

Цель работы.

Приобретение практических навыков по установке и конфигурированию DNS сервера, усвоение **принципов работы системы доменных имён.**

УСТАНОВКА DNS-СЕРВЕРА



```
[sudo] password for astakhovamd:
[root@localhost.user.net ~]# dnf -y install bind bind-utils
Last metadata expiration check: 0:17:20 ago on Wed 12 Nov 2025 08:42:46 PM UTC.
Package bind-utils-32:9.16.23-18.el9_4.1.x86_64 is already installed.
Dependencies resolved.
```

Package	Arch	Version	Repository	Size
Installing:				
bind	x86_64	32:9.16.23-31.el9_6	appstream	488 k
Upgrading:				
bind-libs	x86_64	32:9.16.23-31.el9_6	appstream	1.2 M
bind-license	noarch	32:9.16.23-31.el9_6	appstream	12 k
bind-utils	x86_64	32:9.16.23-31.el9_6	appstream	199 k
Installing dependencies:				
bind-dnssec-doc	noarch	32:9.16.23-31.el9_6	appstream	45 k
python3-bind	noarch	32:9.16.23-31.el9_6	appstream	60 k
python3-ply	noarch	3.11-14.el9.0.1	baseos	103 k
Installing weak dependencies:				
bind-dnssec-utils	x86_64	32:9.16.23-31.el9_6	appstream	112 k

Transaction Summary

Install 5 Packages

```
[root@localhost.user.net ~]# dig www.yandex.ru

; <<>> DiG 9.16.23-RH <<>> www.yandex.ru
;; global options: +cmd
;; Got answer:
;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 64645
;; flags: qr rd ra; QUERY: 1, ANSWER: 3, AUTHORITY: 0, ADDITIONAL: 1

;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags:: udp: 512
;; QUESTION SECTION:
;www.yandex.ru.                IN      A

;; ANSWER SECTION:
www.yandex.ru.                 537     IN      A      77.88.55.88
www.yandex.ru.                 537     IN      A      77.88.44.55
www.yandex.ru.                 537     IN      A      5.255.255.77

;; Query time: 72 msec
;; SERVER: 192.168.100.1#53(192.168.100.1)
;; WHEN: Wed Nov 12 21:00:55 UTC 2025
;; MSG SIZE rcvd: 90

[root@localhost.user.net ~]#
```

КОНФИГУРИРОВАНИЕ КЭШИРУЮЩЕГО DNS-СЕРВЕРА

```
[root@localhost.user.net ~]# systemctl start named
[root@localhost.user.net ~]# systemctl enable named
Created symlink /etc/systemd/system/multi-user.target.wants/named.service → /usr/lib/systemd/system/named.service.
[root@localhost.user.net ~]#
```

```
nmcli> save
Connection 'eth0' (52b757e4-3833-4753-b0eb-de0af7f26f57) successfully updated.
nmcli> quit
[root@localhost.user.net ~]# systemctl restart NetworkManager
[root@localhost.user.net ~]#
```

```
[root@localhost.user.net ~]# nmcli connection edit eth0
```

```
===| nmcli interactive connection editor |===
```

```
Editing existing '802-3-ethernet' connection: 'eth0'
```

```
Type 'help' or '?' for available commands.
```

```
Type 'print' to show all the connection properties.
```

```
Type 'describe [<setting>.<prop>]' for detailed property description.
```

```
You may edit the following settings: connection, 802-3-ethernet (ethernet), 802-1x, dcb, sriov, ethtool, match, ipv4, ipv6, hostname, link, tc, proxy
```

```
nmcli> remove ipv4.dns
```

```
nmcli> set ipv4.ignore-auto-dns yes
```

```
nmcli> set ipv4.dns 127.0.0.1
```

```
nmcli> save
```

```
Connection 'eth0' (52b757e4-3833-4753-b0eb-de0af7f26f57) successfully updated.
```

```
nmcli> quit
```

```
[root@localhost.user.net ~]#
```

```
//
// named.conf
//
// Provided by Red Hat bind package to configure the ISC BIND named(8) DNS
// server as a caching only nameserver (as a localhost DNS resolver only).
//
// See /usr/share/doc/bind*/sample/ for example named configuration files.
//

options {
    listen-on port 53 { 127.0.0.1; any; };
    listen-on-v6 port 53 { ::1; };
    directory "/var/named";
    dump-file "/var/named/data/cache_dump.db";
    statistics-file "/var/named/data/named_stats.txt";
    memstatistics-file "/var/named/data/named_mem_stats.txt";
    secroots-file "/var/named/data/named.secroots";
    recursing-file "/var/named/data/named.recursing";
    allow-query { localhost; 192.168.0.0/16; };
}
```

```
^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
```


КОНФИГУРИРОВАНИЕ ПЕРВИЧНОГО DNS-СЕРВЕРА

```
[root@localhost.user.net etc]# cp /etc/named.rfc1912.zones /etc/named/  
[root@localhost.user.net etc]# cd /etc/named  
[root@localhost.user.net named]#  
mv /etc/named/named.rfc1912.zones /etc/named/astakhovamd.net  
mv: overwrite '/etc/named/astakhovamd.net'? Y  
[root@localhost.user.net named]#
```

```
include "/etc/named/astakhovamd.net";  
include "/etc/named.rfc1912.zones";  
include "/etc/named.root.key";  
include "/etc/named/keys/dhcp_updater.key";
```

```
//  
zone "astakhovamd.net" IN {  
    type master;  
    file "master/fz/astakhovamd.net";  
    allow-update { none; };  
};  
zone "1.168.192.in-addr.arpa" IN {  
    type master;  
    file "master/rz/192.168.1";  
    allow-update { none; };  
};
```

```
bash: cd: /named: No such file or directory  
[root@localhost.user.net etc]# cd /etc/named  
[root@localhost.user.net named]# sudo nano astakhovamd.net  
[root@localhost.user.net named]# cd /var/named  
[root@localhost.user.net named]# mkdir -p /var/named/master/fz  
[root@localhost.user.net named]# mkdir -p /var/named/master/rz  
[root@localhost.user.net named]#
```

АНАЛИЗ РАБОТЫ DNS-СЕРВЕРА

```
root@localhost:~  
GNU nano 5.6.1 named.astakhovamd.net.z  
TTL 1D  
      IN      SOA      server.astakhovamd.net. admin.astakhovamd.net. (  
                          2023111302 ;  
                          3H  
                          1H  
                          1W  
                          1D )  
  
      IN      NS       server.astakhovamd.net.  
  
server IN      A        192.168.1.1  
client IN      A        192.168.1.2  
www    IN      A        192.168.1.1  
hdp    IN      A        192.168.1.3 ;
```

```
root@localhost:~  
GNU nano 5.6.1 /var/named/named.user.net.zone Modified  
; BIND data file for astakhovamd.net  
;  
$TTL 1D  
@      IN      SOA      server.astakhovamd.net. admin.astakhovamd.net. (  
                          2023111201 ; Serial (YYYYMMDDNN)  
                          3H          ; Refresh  
                          1H          ; Retry  
                          1W          ; Expire  
                          1D )        ; Minimum TTL  
  
; Name Servers  
      IN      NS       server.astakhovamd.net.  
  
; A records  
server IN      A        192.168.1.1 ; IP-адрес вашего сервера Vagrant  
client IN      A        192.168.1.2 ; IP-адрес вашего клиента Vagrant (ес  
www    IN      A        192.168.1.1 ; Пример: www указывает на сервер  
  
^G Help      ^O Write Out ^W Where Is  ^K Cut       ^T Execute
```

ВНЕСЕНИЕ ИЗМЕНЕНИЙ В НАСТРОЙКИ ВНУТРЕННЕГО ОКРУЖЕНИЯ ВИРТУАЛЬНОЙ МАШИНЫ

Файл Правка Формат Вид Справка

```
# -*- mode: ruby -*-
# vi: set ft=ruby :

# All Vagrant configuration is done below. The "2" in Vagrant.configure
# configures the configuration version (we support older styles for
# backwards compatibility). Please don't change it unless you know what
# you're doing.
Vagrant.configure("2") do |config|
  # The most common configuration options are documented and commented below.
  # For a complete reference, please see the online documentation at
  # https://docs.vagrantup.com.

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

  # Every Vagrant development environment requires a box. You can search for
  # boxes at https://vagrantcloud.com/search.
  config.vm.box = "ubuntu/trusty64"
```

Activities Terminal Nov 12 22:18

root@localhost:/vagrant/provision/server

GNU nano 5.6.1 dns.sh

```
dnf -y install bind bind-utils

echo "Copy configuration files"

cp -R /vagrant/provision/server/dns/etc/* /etc
cp -R /vagrant/provision/server/dns/var/named/* /var/named

chown -R named:named /etc/named
chown -R named:named /var/named

restorecon -vR /etc
restorecon -vR /var/named

echo "Configure firewall"
firewall-cmd --add-service=dns
firewall-cmd --add-service=dns --permanent

echo "Tuning SELinux"
setsebool named_write_master_zones 1
setsebool -P named_write_master_zones 1

echo "Change dns server address"
nmcli connection edit "System eth0" <<EOF
remove ipv4.dns
set ipv4.ignore-auto-dns yes
```


ИТОГ РАБОТЫ

Были приобретены практические навыки по установке и конфигурированию DNS сервера.