

Лабораторная работа

№2

СТУДЕНТ: САХНО

ГРУППА: НФИБД-02-23

Цель

Приобрести практические навыки по установке и конфигурированию DNS-сервера, усвоить принципы работы системы доменных имён.

Задания

Установите на виртуальной машине server DNS-сервер bind и bind-utils.

Сконфигурируйте на виртуальной машине server кэширующий DNS-сервер.

Сконфигурируйте на виртуальной машине server первичный DNS-сервер.

При помощи утилит dig и host проанализируйте работу DNS-сервера.

Напишите скрипт для Vagrant, фиксирующий действия по установке и конфигурированию DNS-сервера во внутреннем окружении виртуальной машины server. Соответствующим образом внесите изменения в Vagrantfile

```
$ make server-up
Bringing machine 'server' up with 'virtualbox' provider...
==> server: You assigned a static IP ending in ".1" to this machine.
==> server: This is very often used by the router and can cause the
==> server: network to not work properly. If the network doesn't work
==> server: properly, try changing this IP.
==> server: You assigned a static IP ending in ".1" to this machine.
==> server: This is very often used by the router and can cause the
==> server: network to not work properly. If the network doesn't work
==> server: properly, try changing this IP.
==> server: Clearing any previously set forwarded ports...
==> server: Clearing any previously set network interfaces...
==> server: Preparing network interfaces based on configuration...
    server: Adapter 1: nat
    server: Adapter 2: intnet
==> server: Forwarding ports...
    server: 22 (guest) => 2222 (host) (adapter 1)
--> server: Running 'pre-boot' VM customizations
```

Задание №1

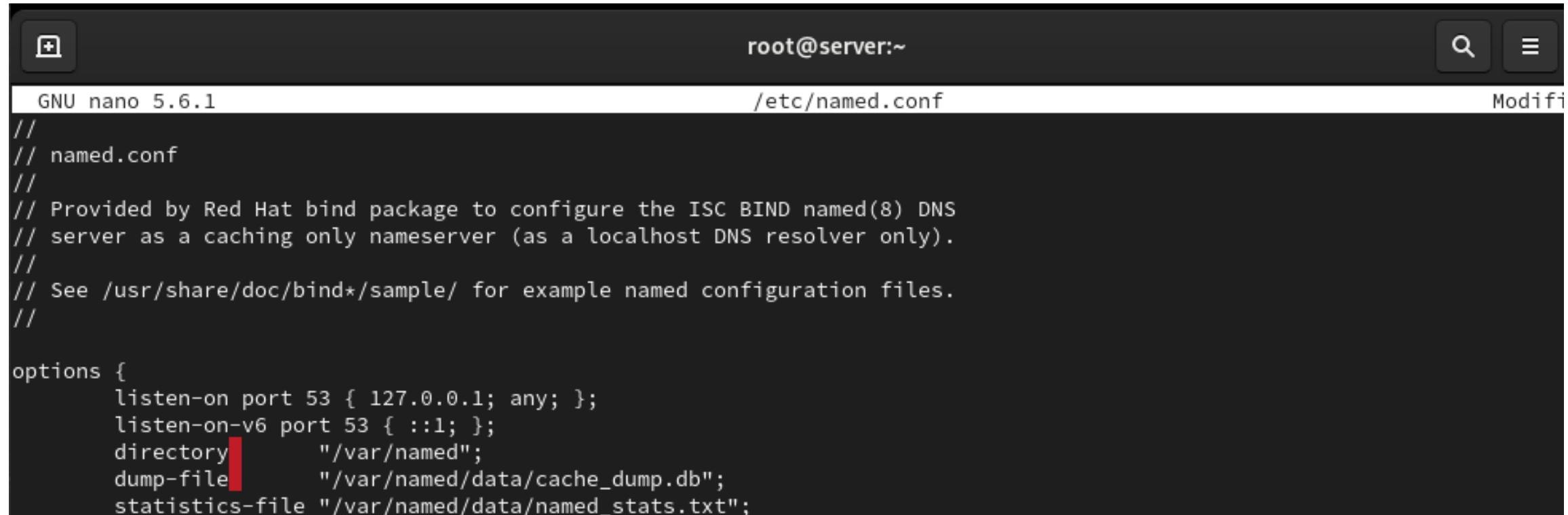
```
; <>> DiG 9.16.23-RH <>> www.yandex.ru
;; global options: +cmd
;; Got answer:
;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 5977
;; flags: qr rd ra; QUERY: 1, ANSWER: 4, AUTHORITY: 0, ADDITIONAL: 0

;; QUESTION SECTION:
;www.yandex.ru.           IN      A

;; ANSWER SECTION:
www.yandex.ru.      3600    IN      A      77.88.55.88
www.yandex.ru.      3600    IN      A      77.88.55.60
www.yandex.ru.      3600    IN      A      5.255.255.70
www.yandex.ru.      3600    IN      A      5.255.255.77

;; Query time: 10 msec
;; SERVER: 10.0.2.3#53(10.0.2.3)
;; WHEN: Sat Nov 11 14:16:24 UTC 2023
;; MSG SIZE  rcvd: 95
```

Задание №1



The screenshot shows a terminal window with the title bar "root@server:~". The window contains the /etc/named.conf configuration file for BIND. The file includes comments about being provided by Red Hat bind package and pointing to sample files. It defines an "options" block with "listen-on" and "listen-on-v6" directives, and specifies "directory", "dump-file", and "statistics-file" paths. The "directory" line has a red highlight under the directory path.

```
GNU nano 5.6.1                               /etc/named.conf                         Modifi
//                                           
// 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";
```

Задание №1

Задание №2

```
// named.rfc1912.zones:  
//  
// Provided by Red Hat caching-nameserver package  
//  
// ISC BIND named zone configuration for zones recommended by  
// RFC 1912 section 4.1 : localhost TLDs and address zones  
// and https://tools.ietf.org/html/rfc6303  
// (c)2007 R W Franks  
//  
// See /usr/share/doc/bind*/sample/ for example named configuration files.  
//  
// Note: empty-zones-enable yes; option is default.  
// If private ranges should be forwarded, add  
// disable-empty-zone "."; into options  
//  
zone "dmbelicheva.net" IN {  
    type master;  
    file "master/fz/dmbelicheva.net";  
    allow-update { none; };  
};  
  
zone "1.168.192.in-addr.arpa" IN {  
    type master;  
    file "master/rz/192.168.1";  
    allow-update { none; };  
};
```

```
cd /var/named  
mkdir -p /var/named/master/fz  
mkdir -p /var/named/master/rz  
cp /var/named/named.localhost /var/named/master/fz/  
cd /var/named/master/fz/
```

```
        2023111100      ; serial
        1D      ; refresh
        1H      ; retry
        1W      ; expire
        3H )    ; minimum

NS      @
A       192.168.1.1
$ORIGIN dmbelicheva.net.■
server A       192.168.1.1
ns     A       192.168.1.1
```

Задание №2

Задание №2

```
VPCS> ping 172.16.20.138/25
84 bytes from 172.16.20.138 icmp_seq=1 ttl=63 time=1.857 ms
84 bytes from 172.16.20.138 icmp_seq=2 ttl=63 time=2.696 ms
84 bytes from 172.16.20.138 icmp_seq=3 ttl=63 time=2.240 ms
84 bytes from 172.16.20.138 icmp_seq=4 ttl=63 time=3.007 ms
84 bytes from 172.16.20.138 icmp_seq=5 ttl=63 time=2.159 ms

VPCS> trace 172.16.20.138/25
trace to 172.16.20.138, 25 hops max, press Ctrl+C to stop
 1  172.16.20.1    3.863 ms  1.909 ms  1.010 ms
 2  *172.16.20.138    7.044 ms (ICMP type:3, code:3, Destination port unreachable)

VPCS> ping 64.100.1.10/24
84 bytes from 64.100.1.10 icmp_seq=1 ttl=63 time=2.115 ms
84 bytes from 64.100.1.10 icmp_seq=2 ttl=63 time=2.083 ms
84 bytes from 64.100.1.10 icmp_seq=3 ttl=63 time=2.262 ms
84 bytes from 64.100.1.10 icmp_seq=4 ttl=63 time=2.708 ms
84 bytes from 64.100.1.10 icmp_seq=5 ttl=63 time=1.931 ms

VPCS> trace 64.100.1.10/24
trace to 64.100.1.10, 24 hops max, press Ctrl+C to stop
 1  172.16.20.1    1.452 ms  0.786 ms  0.853 ms
 2  *64.100.1.10    2.256 ms (ICMP type:3, code:3, Destination port unreachable)
```

```
Subject: A start job for unit dnf-makecache.service has finished successfully
Defined-By: systemd
Support: https://access.redhat.com/support
```

```
A start job for unit dnf-makecache.service has finished successfully.
```

```
The job identifier is 4740.
```

Задание №2

Задание №2

```
.net rz]# systemctl restart named  
.net rz]# █
```