

**МИНИСТЕРСТВО НАУКИ И ВЫСШЕГО ОБРАЗОВАНИЯ
РОССИЙСКОЙ ФЕДЕРАЦИИ**

Санкт-Петербургский национальный исследовательский университет
информационных технологий, механики и оптики

Мегафакультет трансляционных информационных технологий

Факультет информационных технологий и программирования

Лабораторная работа №7

DNS

Выполнила студент группы №M33091

Зыонг Тхи Хуэ Линь

Исрат

Проверил

САНКТ-ПЕТЕРБУРГ

2024

Артефакты:

1. Тексты команд и консольные выходы команд Части 2 п.2.

```
[root@cs7-1 ~]# dig +short www.itmo.ru
51.250.54.78
[root@cs7-1 ~]# dig +trace www.itmo.ru

; <<>> DiG 9.11.4-P2-RedHat-9.11.4-26.P2.el7_9.15 <<>> +trace www.itmo.ru
;; global options: +cmd
;; connection timed out; no servers could be reached

[root@cs7-1 ~]# dig itmo.ru SOA

; <<>> DiG 9.11.4-P2-RedHat-9.11.4-26.P2.el7_9.15 <<>> itmo.ru SOA
;; global options: +cmd
;; Got answer:
;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 2485
;; flags: qr rd ra; QUERY: 1, ANSWER: 1, AUTHORITY: 4, ADDITIONAL: 5

;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags:; udp: 1280
;; QUESTION SECTION:
;itmo.ru.                IN      SOA

;; ANSWER SECTION:
itmo.ru.                  7120    IN      SOA      ns.itmo.ru. hostmaster.itmo.ru. 2024012251 3600 1800
                        86400 3600

;; AUTHORITY SECTION:
itmo.ru.                  2300    IN      NS       ns2.itmo.ru.
itmo.ru.                  2300    IN      NS       ns5.itmo.ru.
itmo.ru.                  2300    IN      NS       ns.itmo.ru.
itmo.ru.                  2300    IN      NS       ns3.itmo.ru.

;; ADDITIONAL SECTION:
ns.itmo.ru.               2300    IN      A        77.234.194.2
ns2.itmo.ru.              2300    IN      A        77.234.221.75
ns3.itmo.ru.              2300    IN      A        77.234.216.2
ns5.itmo.ru.              2300    IN      A        51.250.74.203

;; Query time: 7 msec
;; SERVER: 192.168.50.1#53(192.168.50.1)
;; WHEN: Sun Mar 24 14:33:51 EDT 2024
;; MSG SIZE rcvd: 218
```

```

;; WHEN: Sun Mar 24 14:33:51 EDT 2024
;; MSG SIZE rcvd: 218

[root@c7-1 ~]# dig itmo.ru MX

; <<>> DiG 9.11.4-P2-RedHat-9.11.4-26.P2.el7_9.15 <<>> itmo.ru MX
;; global options: +cmd
;; Got answer:
;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 57307
;; flags: qr rd ra; QUERY: 1, ANSWER: 1, AUTHORITY: 4, ADDITIONAL: 5

;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags:; udp: 1280
;; QUESTION SECTION:
;itmo.ru.                IN      MX

;; ANSWER SECTION:
itmo.ru.                  7200    IN      MX      10 emx.mail.ru.

;; AUTHORITY SECTION:
itmo.ru.                  7200    IN      NS      ns.itmo.ru.
itmo.ru.                  7200    IN      NS      ns2.itmo.ru.
itmo.ru.                  7200    IN      NS      ns5.itmo.ru.
itmo.ru.                  7200    IN      NS      ns3.itmo.ru.

;; ADDITIONAL SECTION:
ns.itmo.ru.               5927    IN      A       77.234.194.2
ns2.itmo.ru.              5927    IN      A       77.234.221.75
ns3.itmo.ru.              5927    IN      A       77.234.216.2
ns5.itmo.ru.              5927    IN      A       51.250.74.203

;; Query time: 15 msec
;; SERVER: 192.168.50.1#53(192.168.50.1)
;; WHEN: Sun Mar 24 14:34:23 EDT 2024
;; MSG SIZE rcvd: 196

[root@c7-1 ~]# _

```

```

[root@c7-1 ~]# dig -x 87.250.250.242

; <<>> DiG 9.11.4-P2-RedHat-9.11.4-26.P2.el7_9.15 <<>> -x 87.250.250.242
;; global options: +cmd
;; Got answer:
;; ->>HEADER<<- opcode: QUERY, status: NXDOMAIN, id: 19403
;; flags: qr rd ra; QUERY: 1, ANSWER: 0, AUTHORITY: 1, ADDITIONAL: 1

;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags:; udp: 1280
;; QUESTION SECTION:
;242.250.250.87.in-addr.arpa. IN      PTR

;; AUTHORITY SECTION:
250.250.87.in-addr.arpa. 300     IN      SOA     ns3.yandex.ru. sysadmin.yandex.ru. 1711305385 900 60
0 3600000 300

;; Query time: 16 msec
;; SERVER: 192.168.50.1#53(192.168.50.1)
;; WHEN: Sun Mar 24 14:36:25 EDT 2024
;; MSG SIZE rcvd: 114

```

```

; <<>> DiG 9.11.4-P2-RedHat-9.11.4-26.P2.el7_9.15 <<>> . NS
;; global options: +cmd
;; Got answer:
;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 21131
;; flags: qr rd ra; QUERY: 1, ANSWER: 13, AUTHORITY: 0, ADDITIONAL: 27

;; OPT PSEUDOSECTION:
;; EDNS: version: 0, flags:: udp: 1280
;; QUESTION SECTION:
; .                               IN      NS

;; ANSWER SECTION:
;                               55407   IN      NS      h.root-servers.net.
;                               55407   IN      NS      k.root-servers.net.
;                               55407   IN      NS      e.root-servers.net.
;                               55407   IN      NS      c.root-servers.net.
;                               55407   IN      NS      d.root-servers.net.
;                               55407   IN      NS      g.root-servers.net.
;                               55407   IN      NS      f.root-servers.net.
;                               55407   IN      NS      b.root-servers.net.
;                               55407   IN      NS      j.root-servers.net.
;                               55407   IN      NS      a.root-servers.net.
;                               55407   IN      NS      i.root-servers.net.
;                               55407   IN      NS      m.root-servers.net.
;                               55407   IN      NS      l.root-servers.net.

;; ADDITIONAL SECTION:
m.root-servers.net. 3595958 IN      A      202.12.27.33
l.root-servers.net. 226929  IN      A      199.7.83.42
k.root-servers.net. 3595958 IN      A      193.0.14.129
j.root-servers.net. 524353  IN      A      192.58.128.30

g.root-servers.net. 521752  IN      A      192.112.36.4
f.root-servers.net. 3595958 IN      A      192.5.5.241
e.root-servers.net. 226928  IN      A      192.203.230.10
d.root-servers.net. 226934  IN      A      199.7.91.13
c.root-servers.net. 508237  IN      A      192.33.4.12
b.root-servers.net. 3595958 IN      A      170.247.170.2
a.root-servers.net. 226921  IN      A      198.41.0.4
m.root-servers.net. 440312  IN      AAAA   2001:dc3::35
l.root-servers.net. 500300  IN      AAAA   2001:500:9f::42
k.root-servers.net. 495773  IN      AAAA   2001:7fd::1
j.root-servers.net. 495773  IN      AAAA   2001:503:c27::2:30
i.root-servers.net. 487407  IN      AAAA   2001:7fe::53
h.root-servers.net. 487407  IN      AAAA   2001:500:1::53
g.root-servers.net. 495773  IN      AAAA   2001:500:12::d0d
f.root-servers.net. 495773  IN      AAAA   2001:500:2f::f
e.root-servers.net. 487407  IN      AAAA   2001:500:a8::e
d.root-servers.net. 487407  IN      AAAA   2001:500:2d::d
c.root-servers.net. 495773  IN      AAAA   2001:500:2::c
b.root-servers.net. 495773  IN      AAAA   2001:1b8:10::b
a.root-servers.net. 495691  IN      AAAA   2001:503:ba3e::2:30

;; Query time: 15 msec
;; SERVER: 192.168.50.1#53(192.168.50.1)
;; WHEN: Sun Mar 24 14:37:17 EDT 2024
;; MSG SIZE rcvd: 811

```

2. конфигурационный файл /etc/named.conf из Части 3, п.3.

```
GNU nano 2.3.1          File: /etc/named.conf          Modified
options {
    listen-on port 53 { 127.0.0.1; 10.0.0.1; };
    listen-on-v6 { none; };
    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";
    recursing-file  "/var/named/data/named.recursing";
    secroots-file   "/var/named/data/named.secroots";
    allow-query     { localhost; 10.0.0.0/24; 10.0.0.1; };

    recursion yes;
    version "My Own DNS Server";
    dnssec-enable yes;
    dnssec-validation yes;

    /* Path to ISC DLV key */
    bindkeys-file   "/etc/named.root.key";

    managed-keys-directory "/var/named/dynamic";

    pid-file "/run/named/named.pid";
    session-keyfile "/run/named/session.key";
};
```

3. Параметры, добавленные в файл /etc/named.conf в Части 4. п. 3.

```
GNU nano 2.3.1          File: linh.local.db
$TTL 1D
@      IN      SOA      ns1.linh.local. hostingmaster.linh.local. (
                        YYYYMMDDhh ; Serial
                        43200 ; Refresh
                        3600 ; Retry
                        3600000 ; Expire
                        300 ; Minimum TTL)

@      IN      NS       ns1.linh.local
ns1     IN      A        10.0.0.1
c7-1    IN      A        10.0.0.1
www     IN      CNAME    c7-1.linh.local.
```

4. Файл зоны, созданный в Части 4.

```
GNU nano 2.3.1          File: /var/named/linh.local.db  Modified
/$TTL 1D
@      IN      SOA      ns1.linh.local. admin.linh.local. (
                        202203401 ; Serial
                        8H ; Refresh
                        2H ; Retry
                        1W ; Expire
                        1D ; Minimum
                        )

@      IN      NS       ns1.linh.local.
ns1     IN      A        10.0.0.1
```

```
[root@c7-1 ~]# sudo named-checkzone linh.local /var/named/linh.local.db
zone linh.local/IN: loaded serial 202203401
OK
[root@c7-1 ~]# _
```