### Ministerul Educaţiei, al Culturii și Cercetării al Republicii Moldova

## Universitatea Tehnică a Moldovei Departamentul Informatică și Ingineria Sistemelor

# **RAPORT**

Lucrarea de laborator nr. 3 ASR

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A verificat:

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Chişinău 2020

#### Actualizați repozitoriile, instalați BIND9 și text-redactor:

#### apt update && apt upgrade -y

```
melniciuc@std14:~ x

File Edit View Search Terminal Help

root@std14:~# ping 8.8.8.8^C

root@std14:~# apt update
root@std14:~# apt update & apt upgrade -y
Get:1 http://ftp.debian.org/debian buster-backports InRelease [46.7 kB]
Get:2 http://security.debian.org/debian-security buster/updates InRelease [65.4 kB]
Hit:3 http://deb.debian.org/debian stable InRelease
Get:4 http://deb.debian.org/debian stable-updates InRelease [51.9 kB]
Get:5 http://deb.debian.org/debian-security stable/updates InRelease [65.4 kB]
Hit:6 http://deb.debian.org/debian buster InRelease
Get:7 http://ftp.debian.org/debian buster InRelease
Get:7 http://ftp.debian.org/debian buster-backports/main Sources.diff/Index [27.8 kB]
Get:8 http://ftp.debian.org/debian buster-backports/main Translation-en.diff/Index [27.8 kB]
Get:9 http://ftp.debian.org/debian buster-backports/main Sources 2020-10-20-021
0.47.pdiff [2,746 B]
Get:11 http://ftp.debian.org/debian buster-backports/main Sources 2020-10-20-080
6.14.pdiff [1,204 B]
Get:11 http://ftp.debian.org/debian buster-backports/main amd64 Packages 2020-10-20-080
6.14.pdiff [1,204 B]
Get:11 http://ftp.debian.org/debian buster-backports/main amd64 Packages 2020-10-20-080
6.14.pdiff [1,204 B]
```

#### apt-get install bind9

```
melniciuc@std14:~

File Edit View Search Terminal Help
root@std14:~# apt-get install bind9
Reading package lists... Done
Building dependency tree
Reading state information... Done
bind9 is already the newest version (1:9.11.5.P4+dfsg-5.1+deb10u2).
0 upgraded, 0 newly installed, 0 to remove and 4 not upgraded.
```

#### apt install -y vim sau apt install -y nano

```
melniciuc@std14:~

File Edit View Search Terminal Help
root@std14:~# apt install -y nano
Reading package lists... Done
Building dependency tree
Reading state information... Done
nano is already the newest version (3.2-3).
0 upgraded, 0 newly installed, 0 to remove and 4 not upgraded.
```

Cu ajutorul unui text-redactor modificați fișierul, astfel ca să setați ip adresă statică, după aceasta restartați serviciul de rețea: nano /etc/network/interfaces

```
melniciuc@std14: ~
File Edit View Search Terminal Help
GNU nano 3.2
                              /etc/network/interfaces
This file describes the network interfaces available on your system
# and how to activate them. For more information, see interfaces(5).
source /etc/network/interfaces.d/*
# The loopback network interface
auto lo
iface lo inet loopback
# The primary network interface
#allow-hotplug eth0
#iface eth0 inet static
      address 10.20.30.14
       netmask 255.255.255.0
       gateway 10.20.30.1
```

Schimbați hostname-ul la în sistemul de operare Debian stdX, unde X este numărul său de ordine în registrul grupei.

```
melniciuc@std14:~

File Edit View Search Terminal Help

root@std14:~# hostnamectl set-hostname std14.lab.local
root@std14:~# hostname
std14.lab.local
root@std14:~#
```

Crearea zonei DNS lab.local, prin editarea fișierului named.conf.local: nano /etc/bind/named.conf.local

```
melniciuc@std14: ~
                                                                                 ×
 File Edit View Search Terminal Help
GNU nano 3.2
                             /etc/bind/named.conf.local
// Do any local configuration here
// Consider adding the 1918 zones here, if they are not used in your
// organization
//include "/etc/bind/zones.rfc1918";
zone "lab.local" {
        type master;
        file "/etc/bind/zones/std14.local.db";
zone "30.20.10.in-addr.arpa" {
        type master;
        file "/etc/bind/zones/rev.30.20.10.inaddr.arpa";
};
```

Editarea fișierului named.conf.options pentru a determina portul pe care va asculta interogările serverul DNS și rețelele permise: nano /etc/bind/named.conf.options

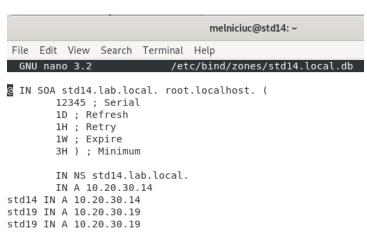
```
melniciuc@std14:~

File Edit View Search Terminal Help

GNU nano 3.2 /etc/bind/named.conf.options

options {
    listen-on port 53 { localhost; 10.20.30.0/24;};
    directory "/var/cache/bind";
    statistics-file "/etc/bind/named_stats.txt";
    allow-query { localhost; 10.20.30.0/24; };
    dnssec-validation auto;
    auth-nxdomain no;
    recursion yes;
};
```

Editarea fișierului lab.local.db, în care vor fi create și păstrate înregistrările corespunzătoare: nano /etc/bind/zones/stdX.local.db

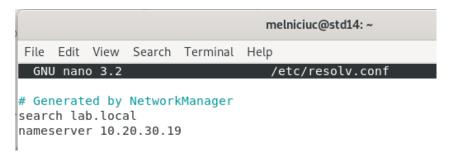


Configurarea zonei revers pentru transformarea IP adresei în nume prin crearea și editarea fișierului /etc/bind/zones/rev.30.20.10.in-addr.arpa: nano /etc/bind/zones/rev.30.20.10.in-addr.arpa

Verificați dacă zonele au fost create corect: named-checkconf /etc/bind/named.conf.local dacă nu sunt erori înseamnă că serviciul de nume a fost configurat correct.

```
root@std14:~# named-checkconf /etc/bind/named.conf.local
root@std14:~# sudo named-checkconf /etc/bind/named.conf.local
root@std14:~# named-checkzone lab.local /etc/bind/zones/std14.local.db
/etc/bind/zones/std14.local.db:1: no TTL specified; using SOA MINTTL instead
zone lab.local/IN: loaded serial 12345
OK
root@std14:~#
```

Modificati ca sistemul de operare să utilizeze serviciul de nume creat de colegul Y dumneavoastră:



64 bytes from 10.20.30.19: icmp\_seq=30 ttl=64 time=3.35 ms 64 bytes from 10.20.30.19: icmp\_seq=31 ttl=64 time=6.66 ms

Din nou efectuați verificările prin utilizarea comenzii ping: la IP adresă a colegului Y la nume (hostname) colegului Y

```
melniciuc@std14: ~
File Edit View Search Terminal Help
64 bytes from 10.20.30.19: icmp_seq=9 ttl=64 time=16.5 ms
64 bytes from 10.20.30.19: icmp_seq=10 ttl=64 time=28.10 ms
                                                                                                      melniciuc@std14: ~
64 bytes from 10.20.30.19: icmp seq=11 ttl=64 time=47.10 ms
64 bytes from 10.20.30.19: icmp_seq=12 ttl=64 time=35.6 ms
                                                                     File Edit View Search Terminal Help
64 bytes from 10.20.30.19: icmp_seq=13 ttl=64 time=40.6 ms
                                                                     root@std14:~# host -l std19.lab.local std14.lab.local
64 bytes from 10.20.30.19: icmp_seq=14 ttl=64 time=40.1 ms
                                                                     ../../../lib/isc/unix/socket.c:5910: connect(fe80::a00:27ff:fe56:47cf#53) 22/
64 bytes from 10.20.30.19: icmp_seq=15 ttl=64 time=43.8 ms
                                                                     Invalid argument
64 bytes from 10.20.30.19: icmp seq=16 ttl=64 time=45.0 ms
                                                                     host: isc_socket_connect: unexpected error
64 bytes from 10.20.30.19: icmp_seq=17 ttl=64 time=44.6 ms
                                                                     root@std14:~# nslookup
64 bytes from 10.20.30.19: icmp seq=18 ttl=64 time=43.3 ms
64 bytes from 10.20.30.19: icmp seq=19 ttl=64 time=62.9 ms
                                                                     [6]+ Stopped
64 bytes from 10.20.30.19: icmp_seq=20 ttl=64 time=32.2 ms
                                                                     root@std14:~# nslookup
64 bytes from 10.20.30.19: icmp_seq=21 ttl=64 time=3.51 ms
                                                                     > std19.lab.local
64 bytes from 10.20.30.19: icmp_seq=22 ttl=64 time=2.98 ms
                                                                                    10.20.30.19
64 bytes from 10.20.30.19: icmp_seq=23 ttl=64 time=11.8 ms
                                                                     Address:
                                                                                    10.20.30.19#53
64 bytes from 10.20.30.19: icmp_seq=24 ttl=64 time=7.67 ms
                                                                     ** server can't find std19.lab.local: SERVFAIL
64 bytes from 10.20.30.19: icmp seq=25 ttl=64 time=35.4 ms
64 bytes from 10.20.30.19: icmp_seq=26 ttl=64 time=11.6 ms
64 bytes from 10.20.30.19: icmp_seq=27 ttl=64 time=45.10 ms
64 bytes from 10.20.30.19: icmp_seq=28 ttl=64 time=48.4 ms
64 bytes from 10.20.30.19: icmp_seq=29 ttl=64 time=45.3 ms
```