

Ministerul Educației, 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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Actualizați repozitoriile, instalați BIND9 și text-redactor:

`apt update && apt upgrade -y`

```
melniciuc@std14: ~
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-backports/main Sources.diff/Index [27.8 kB]
Get:8 http://ftp.debian.org/debian buster-backports/main amd64 Packages.diff/Index [27.8 kB]
Get:9 http://ftp.debian.org/debian buster-backports/main Translation-en.diff/Index [27.8 kB]
Get:10 http://ftp.debian.org/debian buster-backports/main Sources 2020-10-20-0210.47.pdiff [2,746 B]
Get:11 http://ftp.debian.org/debian buster-backports/main Sources 2020-10-20-0806.14.pdiff [1,204 B]
Get:12 http://ftp.debian.org/debian buster-backports/main amd64 Packages 2020-10-20-0806.14.pdiff [2,253 B]
Get:11 http://ftp.debian.org/debian buster-backports/main Sources 2020-10-20-0806.14.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 Modified  
  
# 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

```
melniciuc@std14: ~  
File Edit View Search Terminal Help  
GNU nano 3.2 /etc/bind/zones/std14.local.db  
@ IN SOA std14.lab.local. root.localhost. (  
    12345 ; Serial  
    1D ; Refresh  
    1H ; Retry  
    1W ; Expire  
    3H ) ; Minimum  
  
    IN NS std14.lab.local.  
    IN A 10.20.30.14  
std14 IN A 10.20.30.14  
std19 IN A 10.20.30.19  
std19 IN A 10.20.30.19
```

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

```
melniciuc@std14: ~  
File Edit View Search Terminal Help  
GNU nano 3.2 /etc/bind/zones/rev.30.20.10.in-addr.arpa  
@ IN SOA lab.local. root.lab.local. (  
    12345 ; Serial  
    1D ; Refresh  
    1H ; Retry  
    1W ; Expire  
    3H ) ; Minimum  
  
IN NS stdX.lab.local.  
std14 IN PTR 10.20.30.14  
14 IN PTR std14.lab.local.  
19 IN PTR std19.lab.local.  
19 IN PTR std19.lab.local.
```

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 corect.

```
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:~# █
```

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

```
melniciuc@std14: ~
File Edit View Search Terminal Help
GNU nano 3.2 /etc/resolv.conf

# Generated by NetworkManager
search lab.local
nameserver 10.20.30.19
```

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
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
64 bytes from 10.20.30.19: icmp_seq=13 ttl=64 time=40.6 ms
64 bytes from 10.20.30.19: icmp_seq=14 ttl=64 time=40.1 ms
64 bytes from 10.20.30.19: icmp_seq=15 ttl=64 time=43.8 ms
64 bytes from 10.20.30.19: icmp_seq=16 ttl=64 time=45.0 ms
64 bytes from 10.20.30.19: icmp_seq=17 ttl=64 time=44.6 ms
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
64 bytes from 10.20.30.19: icmp_seq=20 ttl=64 time=32.2 ms
64 bytes from 10.20.30.19: icmp_seq=21 ttl=64 time=3.51 ms
64 bytes from 10.20.30.19: icmp_seq=22 ttl=64 time=2.98 ms
64 bytes from 10.20.30.19: icmp_seq=23 ttl=64 time=11.8 ms
64 bytes from 10.20.30.19: icmp_seq=24 ttl=64 time=7.67 ms
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
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
█
```

```
melniciuc@std14: ~
File Edit View Search Terminal Help
root@std14:~# host -l std19.lab.local std14.lab.local
../../../../lib/isc/isc/socket.c:5910: connect(fe80::a00:27ff:fe56:47cf#53) 22/
Invalid argument
host: isc_socket_connect: unexpected error
root@std14:~# nslookup
> ^Z
[6]+  Stopped                  nslookup
root@std14:~# nslookup
> std19.lab.local
Server:          10.20.30.19
Address:         10.20.30.19#53

** server can't find std19.lab.local: SERVFAIL
> █
```