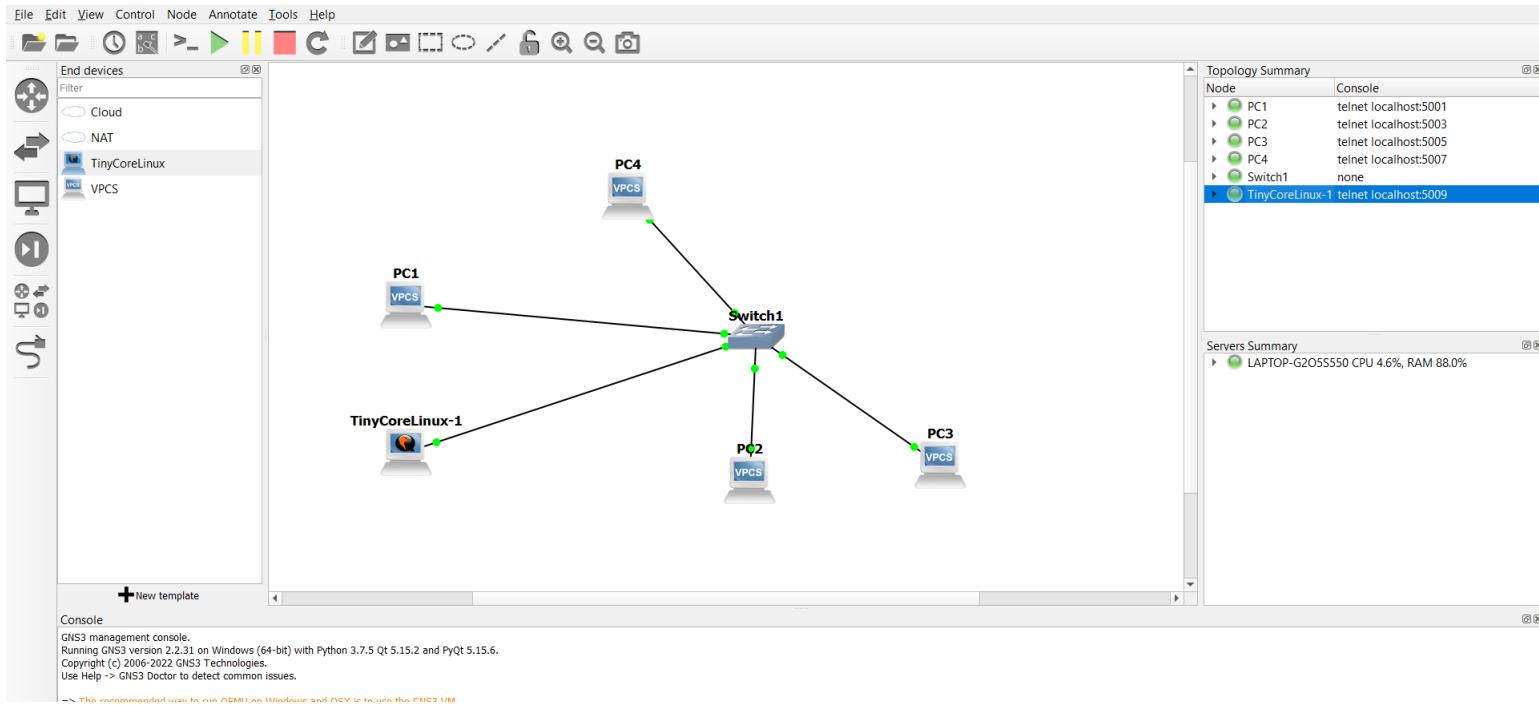


# ΑΣΚΗΣΗ 1



## Ερώτημα 1

PC1->help

```
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For more information, please visit wiki.freecode.com.cn.

Press '?' to get help.

Executing the startup file

PC1> help

? [COMMAND [ARG ...]] Print help
arg [COMMAND] Invoke OS COMMAND with optional ARG(s)
clear [ARG] Shortcut for: show arg. Show arg table
dhcp [OPTION] Clear IPv4/IPv6, arp/neighbor cache, command history
disconnect [OPTION] Shortcut for: ip dhcp. Get IPv4 address via DHCP
echo [TEXT] Exit the telnet session (daemon mode)
exec [TEXT] Display TEXT in output. See also set echo ?
help [COMMAND] Show help for: show history. List the command history
ip [ARGS ...] [OPTION] Configure the current VPC's IP settings. See ip ?
load [FILENAME] Load the configuration/script from the file FILENAME
ping [HOST [OPTION ...]] Ping HOST with ICMP (default) or TCP/UDP. See ping ?
quit [COMMAND] Quit program
relay [ARG ...] Configure packet relay between UDP ports. See relay ?
rlogin [ip] [port] Telnet to port on host at ip (relative to host PC)
set [FILENAME] Set configuration file for this VPC. See set ?
show [ARG ...] Print the information of VPCs (default). See show ?
sleep [seconds] [TEXT] Print TEXT and pause running script for seconds
trace [HOST [OPTION ...]] Print the path packets take to network HOST
version [COMMAND] Shortcut for: show version

To get command syntax help, please enter '?' as an argument of the command.

PC1>
```

## Ερώτημα 2

PC1->ip

```
? Print help
l COMMAND [ARG ...] Invoke an OS COMMAND with optional ARG(s)
arp Shortcut for: show arp Show arp table
clear ARG Clear IPv4/IPv6, arp/neighbor cache, command history
dhcp [OPTION] Shortcut for: ip dhcp. Get IPv4 address via DHCP
disconnect Exit the telnet session (daemon mode)
echo TEXT Display TEXT in output. See also set echo ?
help Print help
history Show history. List the command history
ip [ARG ...] [OPTION] Configure the current VPC's IP settings. See ip ?
load [FILENAME] Load the configuration/script from the file FILENAME
ping HOST [OPTION ...] Ping HOST with ICMP (default) or TCP/UDP. See ping ?
quit Quit program
relay ARG ... Configure packet relay between UDP ports. See relay ?
rlogin [ip] port Telnet to port on host at ip (relative to host PC)
save [FILENAME] Save the configuration to the file FILENAME
set ARG ... Set VPC name and other options. Try set ?
show [ARG ...] Print information of VPCs (default). See show ?
sleep [Seconds] [TEXT] Print TEXT and pause running script for seconds
trace HOST [OPTION ...] Print the path packets take to network HOST
version Shortcut for: show version

To get command syntax help, please enter '?' as an argument of the command.

PC1> ip

ip ARG ... [OPTION]
Configure the current VPC's IP settings
  ARG ...
    address [mask] [gateway]
    address [gateway] [mask]
      Set the VPC's ip, default gateway ip and network mask
        Default IPv4 mask is /24, IPv6 is /64. Example:
          ip 10.1.1.70/26 10.1.1.65 set the VPC's ip to 10.1.1.70,
          the gateway to 10.1.1.65, the netmask to 255.255.255.128.
          In tap mode, the ip of the tapx is the maximum host ID
          of the subnet. In the example above the tapx ip would be
          10.1.1.126
  auto      Attempt to obtain IPv6 address, mask and gateway using SLAAC
  dhcp [OPTION] Attempt to obtain IPv4 address, mask, gateway, DNS via DHCP
    -d      Show DHCP packet decode
    -r      Renew DHCP lease
    -x      Release DHCP lease
  dns ip   Set DNS server ip, delete if ip is '0'
  domain NAME Set local domain name to NAME

PC1>
```

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## Ερώτημα 3

Χρησιμοποιησα ως default gateway: **255.255.255.0**

```
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Press '?' to get help.

Executing the startup file

PC1> ip 192.168.1.4 255.255.255.0
Checking for duplicate address...
PC1 : 192.168.1.4 255.255.255.0

PC1> show ip

NAME      : PC1[1]
IP/MASK   : 192.168.1.4/24
GATEWAY   : 255.255.255.0
DNS       :
MAC       : 00:50:79:66:68:00
LPORT     : 10013
RHOST:PORT : 127.0.0.1:10014
MTU:      : 1500

PC1>
```

```
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Dedicated to Daling.
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Press '?' to get help.

Executing the startup file

PC2> ip 192.168.1.5 255.255.255.0
Checking for duplicate address...
PC1 : 192.168.1.5 255.255.255.0

PC2> show ip

NAME      : PC2[1]
IP/MASK   : 192.168.1.5/24
GATEWAY   : 255.255.255.0
DNS       :
MAC       : 00:50:79:66:68:02
LPORT     : 10009
RHOST:PORT : 127.0.0.1:10010
MTU:      : 1500

PC2> 
```

```
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Press '?' to get help.

Executing the startup file

PC3> ip 192.168.1.6 255.255.255.0
Checking for duplicate address...
PC1 : 192.168.1.6 255.255.255.0

PC3> show ip

NAME      : PC3[1]
IP/MASK   : 192.168.1.6/24
GATEWAY   : 255.255.255.0
DNS       :
MAC       : 00:50:79:66:68:03
LPORT     : 10011
RHOST:PORT : 127.0.0.1:10012
MTU:      : 1500

PC3> 
```

solarwinds | Solar-PuTTY free tool

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```

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Press '?' to get help.

Executing the startup file

PC4> ip 192.168.1.7 255.255.255.0
Checking for duplicate address...
PC1 : 192.168.1.7 255.255.255.0

PC4> show ip
NAME      : PC4[1]
IP/MASK   : 192.168.1.7/24
GATEWAY   : 255.255.255.0
DNS       :
MAC       : 00:50:79:66:68:01
LPORT     : 10015
RHOST:PORT: 127.0.0.1:10016
MTU       : 1500

PC4>

```

## Ερώτημα 4

Περασμα ip address στο tinycorelinux

```

gns3@box:~$ sudo ifconfig eth0 192.168.0.3 netmask 255.255.255.0 broadcast 192.1
68.0.255 up
gns3@box:~$ filetool.sh -b
gns3@box:~$ ifconfig
eth0      Link encap:Ethernet HWaddr 0C:10:F9:06:00:00
          inet addr:192.168.0.3  Bcast:192.168.0.255  Mask:255.255.255.0
          UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
          RX packets:12 errors:0 dropped:0 overruns:0 frame:0
          TX packets:54 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1000
          RX bytes:768 (760.0 B)  TX bytes:18468 (18.0 KB)

lo      Link encap:Local Loopback
          inet addr:127.0.0.1  Netmask:255.0.0.0
          UP LOOPBACK RUNNING  MTU:65536  Metric:1
          RX packets:0 errors:0 dropped:0 overruns:0 frame:0
          TX packets:0 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:0
          RX bytes:0 (0.0 B)  TX bytes:0 (0.0 B)

gns3@box:~$ 

```

## Ερώτημα 5

Εκτελεσει ping από PC1 προς τα υπολοιπα

Εκτελεσει ping από PC2 προς τα υπολοιπα

και βλεπω πιως επικοινωνουν

και βλεπω πιως επικοινωνουν

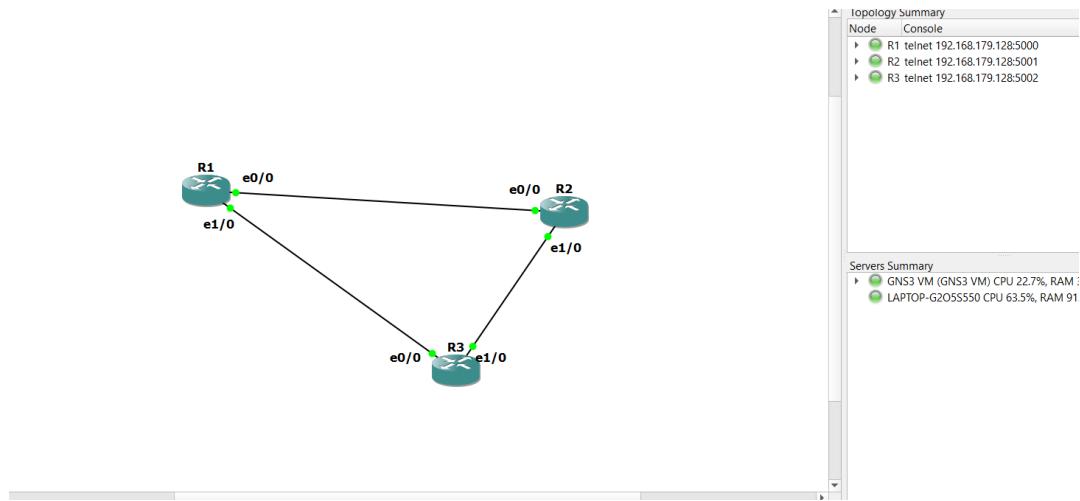
```
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Press '?' to get help.  
Executing the startup file  
PC1>  
PC1> ip 192.168.1.4 255.255.255.0  
Checking for duplicate address...  
PC1 : 192.168.1.4 255.255.255.0  
PC1> show ip  
NAME : PC1[1]  
IP/MASK : 192.168.1.4/24  
GATEWAY : 255.255.255.0  
DNS :  
MAC : 00:50:79:66:68:00  
LPORT : 10013  
RHOST:PORT : 127.0.0.1:10014  
MTU : 1500  
PC1> ping 192.168.1.5  
84 bytes from 192.168.1.5 icmp_seq=1 ttl=64 time=0.357 ms  
84 bytes from 192.168.1.5 icmp_seq=2 ttl=64 time=0.449 ms  
84 bytes from 192.168.1.5 icmp_seq=3 ttl=64 time=0.539 ms  
84 bytes from 192.168.1.5 icmp_seq=4 ttl=64 time=0.771 ms  
84 bytes from 192.168.1.5 icmp_seq=5 ttl=64 time=0.861 ms  
PC1> ping 192.168.1.6  
84 bytes from 192.168.1.6 icmp_seq=1 ttl=64 time=0.518 ms  
84 bytes from 192.168.1.6 icmp_seq=2 ttl=64 time=0.666 ms  
84 bytes from 192.168.1.6 icmp_seq=3 ttl=64 time=0.463 ms  
84 bytes from 192.168.1.6 icmp_seq=4 ttl=64 time=0.568 ms  
84 bytes from 192.168.1.6 icmp_seq=5 ttl=64 time=0.471 ms  
PC1> ping 192.168.1.7  
84 bytes from 192.168.1.7 icmp_seq=1 ttl=64 time=0.699 ms  
84 bytes from 192.168.1.7 icmp_seq=2 ttl=64 time=0.805 ms  
84 bytes from 192.168.1.7 icmp_seq=3 ttl=64 time=0.640 ms  
84 bytes from 192.168.1.7 icmp_seq=4 ttl=64 time=0.589 ms  
84 bytes from 192.168.1.7 icmp_seq=5 ttl=64 time=0.502 ms  
PC1>  
PC2> show ip  
NAME : PC2[1]  
IP/MASK : 192.168.1.5/24  
GATEWAY : 255.255.255.0  
DNS :  
MAC : 00:50:79:66:68:02  
LPORT : 10009  
RHOST:PORT : 127.0.0.1:10010  
MTU : 1500  
PC2> ping 192.168.1.4  
84 bytes from 192.168.1.4 icmp_seq=1 ttl=64 time=0.114 ms  
84 bytes from 192.168.1.4 icmp_seq=2 ttl=64 time=0.493 ms  
84 bytes from 192.168.1.4 icmp_seq=3 ttl=64 time=0.600 ms  
84 bytes from 192.168.1.4 icmp_seq=4 ttl=64 time=0.746 ms  
84 bytes from 192.168.1.4 icmp_seq=5 ttl=64 time=0.531 ms  
PC2> ping 192.168.1.6  
84 bytes from 192.168.1.6 icmp_seq=1 ttl=64 time=0.490 ms  
84 bytes from 192.168.1.6 icmp_seq=2 ttl=64 time=0.488 ms  
84 bytes from 192.168.1.6 icmp_seq=3 ttl=64 time=0.487 ms  
84 bytes from 192.168.1.6 icmp_seq=4 ttl=64 time=0.597 ms  
84 bytes from 192.168.1.6 icmp_seq=5 ttl=64 time=0.491 ms  
PC2> ping 192.168.1.7  
84 bytes from 192.168.1.7 icmp_seq=1 ttl=64 time=0.568 ms  
84 bytes from 192.168.1.7 icmp_seq=2 ttl=64 time=0.501 ms  
84 bytes from 192.168.1.7 icmp_seq=3 ttl=64 time=0.478 ms  
84 bytes from 192.168.1.7 icmp_seq=4 ttl=64 time=0.376 ms  
84 bytes from 192.168.1.7 icmp_seq=5 ttl=64 time=0.470 ms  
PC2>
```

solarwinds | Solar-PuTTY free tool

Αντιστοιχα τα αποτελεσματα για PC3-PC4 για επικοινωνια με τα υπόλοιπα

```
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For more information, please visit wiki.freecode.com.cn.  
Press '?' to get help.  
Executing the startup file  
PC3>  
PC3> ip 192.168.1.6 255.255.255.0  
Checking for duplicate address...  
PC1 : 192.168.1.6 255.255.255.0  
PC3> show ip  
NAME : PC3[1]  
IP/MASK : 192.168.1.6/24  
GATEWAY : 255.255.255.0  
DNS :  
MAC : 00:50:79:66:68:03  
LPORT : 10011  
RHOST:PORT : 127.0.0.1:10012  
MTU : 1500  
PC3> ping 192.168.1.4  
84 bytes from 192.168.1.4 icmp_seq=1 ttl=64 time=0.598 ms  
84 bytes from 192.168.1.4 icmp_seq=2 ttl=64 time=0.615 ms  
84 bytes from 192.168.1.4 icmp_seq=3 ttl=64 time=0.783 ms  
84 bytes from 192.168.1.4 icmp_seq=4 ttl=64 time=0.564 ms  
84 bytes from 192.168.1.4 icmp_seq=5 ttl=64 time=0.793 ms  
PC3> ping 192.168.1.5  
84 bytes from 192.168.1.5 icmp_seq=1 ttl=64 time=0.887 ms  
84 bytes from 192.168.1.5 icmp_seq=2 ttl=64 time=0.945 ms  
84 bytes from 192.168.1.5 icmp_seq=3 ttl=64 time=0.539 ms  
84 bytes from 192.168.1.5 icmp_seq=4 ttl=64 time=0.715 ms  
84 bytes from 192.168.1.5 icmp_seq=5 ttl=64 time=0.791 ms  
PC3> ping 192.168.1.7  
84 bytes from 192.168.1.7 icmp_seq=1 ttl=64 time=0.554 ms  
84 bytes from 192.168.1.7 icmp_seq=2 ttl=64 time=0.518 ms  
84 bytes from 192.168.1.7 icmp_seq=3 ttl=64 time=0.525 ms  
84 bytes from 192.168.1.7 icmp_seq=4 ttl=64 time=0.523 ms  
84 bytes from 192.168.1.7 icmp_seq=5 ttl=64 time=0.492 ms  
PC3>  
PC4> show ip  
NAME : PC4[1]  
IP/MASK : 192.168.1.7/24  
GATEWAY : 255.255.255.0  
DNS :  
MAC : 00:66:79:66:68:01  
LPORT : 10015  
RHOST:PORT : 127.0.0.1:10016  
MTU : 1500  
PC4> ping 192.168.1.4  
84 bytes from 192.168.1.4 icmp_seq=1 ttl=64 time=0.454 ms  
84 bytes from 192.168.1.4 icmp_seq=2 ttl=64 time=0.465 ms  
84 bytes from 192.168.1.4 icmp_seq=3 ttl=64 time=0.504 ms  
84 bytes from 192.168.1.4 icmp_seq=4 ttl=64 time=0.499 ms  
84 bytes from 192.168.1.4 icmp_seq=5 ttl=64 time=0.465 ms  
PC4> ping 192.168.1.5  
84 bytes from 192.168.1.5 icmp_seq=1 ttl=64 time=0.536 ms  
84 bytes from 192.168.1.5 icmp_seq=2 ttl=64 time=0.506 ms  
84 bytes from 192.168.1.5 icmp_seq=3 ttl=64 time=0.582 ms  
84 bytes from 192.168.1.5 icmp_seq=4 ttl=64 time=0.655 ms  
84 bytes from 192.168.1.5 icmp_seq=5 ttl=64 time=0.486 ms  
PC4> ping 192.168.1.6  
84 bytes from 192.168.1.6 icmp_seq=1 ttl=64 time=0.897 ms  
84 bytes from 192.168.1.6 icmp_seq=2 ttl=64 time=0.552 ms  
84 bytes from 192.168.1.6 icmp_seq=3 ttl=64 time=1.826 ms  
84 bytes from 192.168.1.6 icmp_seq=4 ttl=64 time=0.845 ms  
84 bytes from 192.168.1.6 icmp_seq=5 ttl=64 time=0.511 ms  
PC4>
```

ΑΣΚΗΣΗ 2



## Ερωτημα 1:

**R1:**

```

Mar 1 00:00:50.574: %CRYPTO-6-GD01_ON_OFF: GD01 IS OFF
R1#conf t
Enter configuration commands, one per line. End with CNTL/Z.
R1(config)#int e0/0
R1(config-if)#ip address 10.0.0.1 255.255.255.0
R1(config-if)#no shutdown
R1(config-if)#
*Mar 1 00:02:12.272: %LINK-3-UPDOWN: Interface Ethernet0/0, changed state to up
R1(config-if)#
*Mar 1 00:02:13.274: %LINEPROTO-5-UPDOWN: Line protocol on Interface Ethernet0/0, changed state to up
R1(config-if)#int e1/0
R1(config-if)#ip address 12.0.0.1 255.255.255.0
R1(config-if)#no shutdown
R1(config-if)#
*Mar 1 00:02:35.591: %LINK-3-UPDOWN: Interface Ethernet1/0, changed state to up
*Mar 1 00:02:36.592: %LINEPROTO-5-UPDOWN: Line protocol on Interface Ethernet1/0, changed state to up
R1(config-if)#end
R1#
*Mar 1 00:02:58.055: %SYS-5-CONFIG_I: Configured from console by console
R1#sh ip int br
Interface          IP-Address      OK? Method Status        Protocol
Ethernet0/0        10.0.0.1       YES manual up           up
Ethernet1/0        12.0.0.1       YES manual up           up
Ethernet1/1        unassigned     YES unset administratively down down
Ethernet1/2        unassigned     YES unset administratively down down
Ethernet1/3        unassigned     YES unset administratively down down

```

```

Ethernet0/0      unassigned      YES unset administratively down down
R1#sh int e0/0
Ethernet0/0 is up, line protocol is up
  Hardware is AmdP2, address is c801.1869.0000 (bia c801.1869.0000)
  Internet address is 10.0.0.1/24
  MTU 1500 bytes, BW 10000 Kbit/sec, DLY 1000 usec,
    reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation ARPA, loopback not set
  Keepalive set (10 sec)
  ARP type: ARPA, ARP Timeout 04:00:00
  Last input never, output 00:00:07, output hang never
  Last clearing of "show interface" counters never
  Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
  Queueing strategy: fifo
  Output queue: 0/40 (size/max)
  5 minute input rate 0 bits/sec, 0 packets/sec
  5 minute output rate 0 bits/sec, 0 packets/sec
    0 packets input, 0 bytes, 0 no buffer
    Received 0 broadcasts, 0 runts, 0 giants, 0 throttles
    0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
    0 input packets with dribble condition detected
    15 packets output, 2065 bytes, 0 underruns
    0 output errors, 0 collisions, 1 interface resets
    0 unknown protocol drops
    0 babbles, 0 late collision, 0 deferred
    0 lost carrier, 0 no carrier
    0 output buffer failures, 0 output buffers swapped out

```

```

R1#sh int e1/0
Ethernet0/0 is up, line protocol is up
Hardware is AmdP2, address is c801.1869.0010 (bia c801.1869.0010)
Internet address is 12.0.0.1/24
MTU 1500 bytes, BW 10000 Kbit/sec, DLY 1000 usec,
  reliability 255/255, txload 1/255, rxload 1/255
Encapsulation ARPA, loopback not set
Keepalive set (10 sec)
ARP type: ARPA, ARP Timeout 04:00:00
Last input never, output 00:00:00, output hang never
Last clearing of "show interface" counters never
Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
Queueing strategy: fifo
Output queue: 0/40 (size/max)
  5 minute input rate 0 bits/sec, 0 packets/sec
  5 minute output rate 0 bits/sec, 0 packets/sec
    0 packets input, 0 bytes, 0 no buffer
    Received 0 broadcasts, 0 runts, 0 giants, 0 throttles
    0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
    0 input packets with dribble condition detected
    13 packets output, 1972 bytes, 0 underruns
    0 output errors, 0 collisions, 1 interface resets
    0 unknown protocol drops
    0 babbles, 0 late collision, 0 deferred
    0 lost carrier, 0 no carrier
    0 output buffer failures, 0 output buffers swapped out
R1#

```

## R2:

```

R2#CONF T
Enter configuration commands, one per line. End with CNTL/Z.
R2(config)#int e0/0
R2(config-if)#ip address 10.0.0.2 255.255.255.0
R2(config-if)#no shutdown
R2(config-if)#
*Mar 1 00:07:03.566: %LINK-3-UPDOWN: Interface Ethernet0/0, changed state to up
R2(config-if)#
*Mar 1 00:07:04.567: %LINEPROTO-5-UPDOWN: Line protocol on Interface Ethernet0/0, changed state to up
R2(config-if)#int e1/0
R2(config-if)#ip address 11.0.0.2 255.255.255.0
R2(config-if)#no shutdown
R2(config-if)#
*Mar 1 00:07:25.526: %LINK-3-UPDOWN: Interface Ethernet1/0, changed state to up
*Mar 1 00:07:26.527: %LINEPROTO-5-UPDOWN: Line protocol on Interface Ethernet1/0, changed state to up
R2(config-if)#end
R2#
*Mar 1 00:07:30.282: %SYS-5-CONFIG_I: Configured from console by console
R2#sh ip int br
Interface          IP-Address      OK? Method Status        Protocol
Ethernet0/0         10.0.0.2       YES manual up           up
Ethernet1/0         11.0.0.2       YES manual up           up
Ethernet1/1         unassigned     YES unset administratively down down
Ethernet1/2         unassigned     YES unset administratively down down
Ethernet1/3         unassigned     YES unset administratively down down
R2#

```

```

R2#sh int e0/0
Ethernet0/0 is up, line protocol is up
Hardware is AmdP2, address is c802.187b.0000 (bia c802.187b.0000)
Internet address is 10.0.0.2/24
MTU 1500 bytes, BW 10000 Kbit/sec, DLY 1000 usec,
  reliability 255/255, txload 1/255, rxload 1/255
Encapsulation ARPA, loopback not set
Keepalive set (10 sec)
ARP type: ARPA, ARP Timeout 04:00:00
Last input 00:00:59, output 00:00:01, output hang never
Last clearing of "show interface" counters never
Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
Queueing strategy: fifo
Output queue: 0/40 (size/max)
  5 minute input rate 0 bits/sec, 0 packets/sec
  5 minute output rate 0 bits/sec, 0 packets/sec
    1 packets input, 358 bytes, 0 no buffer
    Received 1 broadcasts, 0 runts, 0 giants, 0 throttles
    0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
    0 input packets with dribble condition detected
    13 packets output, 1945 bytes, 0 underruns
    0 output errors, 0 collisions, 1 interface resets
    0 unknown protocol drops
    0 babbles, 0 late collision, 0 deferred
    0 lost carrier, 0 no carrier
    0 output buffer failures, 0 output buffers swapped out
R2#

```

```

R2#show int e1/0
Ethernet1/0 is up, line protocol is up
  Hardware is AmdP2, address is c802.187b.0010 (bia c802.187b.0010)
  Internet address is 11.0.0.2/24
  MTU 1500 bytes, BW 10000 Kbit/sec, DLY 1000 usec,
    reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation ARPA, loopback not set
  Keepalive set (10 sec)
  ARP type: ARPA, ARP Timeout 04:00:00
  Last input never, output 00:00:04, output hang never
  Last clearing of "show interface" counters never
  Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
  Queueing strategy: fifo
  Output queue: 0/40 (size/max)
  5 minute input rate 0 bits/sec, 0 packets/sec
  5 minute output rate 0 bits/sec, 0 packets/sec
    0 packets input, 0 bytes, 0 no buffer
    Received 0 broadcasts, 0 runts, 0 giants, 0 throttles
    0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
    0 input packets with dribble condition detected
    12 packets output, 1614 bytes, 0 underruns
    0 output errors, 0 collisions, 1 interface resets
    0 unknown protocol drops
    0 babbles, 0 late collision, 0 deferred
    0 lost carrier, 0 no carrier
    0 output buffer failures, 0 output buffers swapped out
R2#

```

### R3:

```

Mar 1 00:09:39.420: %CRYPTO-0-KEYID_ON_OFF: QDQI is OFF
R3#conf t
Enter configuration commands, one per line. End with CNTL/Z.
R3(config)#int e0/0
R3(config-if)#ip address 12.0.0.3 255.255.255.0
R3(config-if)#no shutdown
R3(config-if)#
*Mar 1 00:09:17.682: %LINK-3-UPDOWN: Interface Ethernet0/0, changed state to up
R3(config-if)#
*Mar 1 00:09:18.683: %LINEPROTO-5-UPDOWN: Line protocol on Interface Ethernet0/0, changed state to up
R3(config-if)#int e1/0
R3(config-if)#ip address 11.0.0.3 255.255.255.0
R3(config-if)#no shutdown
R3(config-if)#
*Mar 1 00:09:39.481: %LINK-3-UPDOWN: Interface Ethernet1/0, changed state to up
R3(config-if)#
*Mar 1 00:09:40.483: %LINEPROTO-5-UPDOWN: Line protocol on Interface Ethernet1/0, changed state to up
R3(config-if)#end
R3#sh
*Mar 1 00:09:47.611: %SYS-5-CONFIG_I: Configured from console by console
R3#sh ip int br
Interface          IP-Address      OK? Method Status      Protocol
Ethernet0/0        12.0.0.3       YES manual up           up
Ethernet1/0        11.0.0.3       YES manual up           up
Ethernet1/1        unassigned     YES unset administratively down down
Ethernet1/2        unassigned     YES unset administratively down down
Ethernet1/3        unassigned     YES unset administratively down down
R3#

```

```
R3#show int e0/0
Ethernet0/0 is up, line protocol is up
  Hardware is AmdP2, address is c803.188b.0000 (bia c803.188b.0000)
  Internet address is 12.0.0.3/24
  MTU 1500 bytes, BW 10000 Kbit/sec, DLY 1000 usec,
    reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation ARPA, loopback not set
  Keepalive set (10 sec)
  ARP type: ARPA, ARP Timeout 04:00:00
  Last input 00:00:34, output 00:00:00, output hang never
  Last clearing of "show interface" counters never
  Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
  Queueing strategy: fifo
  Output queue: 0/40 (size/max)
  5 minute input rate 0 bits/sec, 0 packets/sec
  5 minute output rate 0 bits/sec, 0 packets/sec
    1 packets input, 358 bytes, 0 no buffer
    Received 1 broadcasts, 0 runts, 0 giants, 0 throttles
    0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
    0 input packets with dribble condition detected
    13 packets output, 1664 bytes, 0 underruns
    0 output errors, 0 collisions, 1 interface resets
    0 unknown protocol drops
    0 babbles, 0 late collision, 0 deferred
    0 lost carrier, 0 no carrier
    0 output buffer failures, 0 output buffers swapped out
R3#
```

```
R3#show int e1/0
Ethernet1/0 is up, line protocol is up
  Hardware is AmdP2, address is c803.188b.0010 (bia c803.188b.0010)
  Internet address is 11.0.0.3/24
  MTU 1500 bytes, BW 10000 Kbit/sec, DLY 1000 usec,
    reliability 255/255, txload 1/255, rxload 1/255
  Encapsulation ARPA, loopback not set
  Keepalive set (10 sec)
  ARP type: ARPA, ARP Timeout 04:00:00
  Last input 00:00:01, output 00:00:05, output hang never
  Last clearing of "show interface" counters never
  Input queue: 0/75/0/0 (size/max/drops/flushes); Total output drops: 0
  Queueing strategy: fifo
  Output queue: 0/40 (size/max)
  5 minute input rate 0 bits/sec, 0 packets/sec
  5 minute output rate 0 bits/sec, 0 packets/sec
    2 packets input, 435 bytes, 0 no buffer
    Received 2 broadcasts, 0 runts, 0 giants, 0 throttles
    0 input errors, 0 CRC, 0 frame, 0 overrun, 0 ignored
    0 input packets with dribble condition detected
    12 packets output, 1631 bytes, 0 underruns
    0 output errors, 0 collisions, 1 interface resets
    0 unknown protocol drops
    0 babbles, 0 late collision, 0 deferred
    0 lost carrier, 0 no carrier
    0 output buffer failures, 0 output buffers swapped out
R3#
```

## Ερωτημα 2:

Ελεγχος Συνδεσιμοτητας από τον R1 προς τους R2-R3:

```
R1#ping 10.0.0.2
R1#ping 12.0.0.3
R1#
```

Ελεγχος Συνδεσιμοτητας από τον R2 προς τους R1-R3:

```
R2#ping 10.0.0.1
R2#ping 11.0.0.3
R2#
```

Ελεγχος Συνδεσιμοτητας από τον R3 προς τους R1-R2:

```
R3#ping 12.0.0.1
R3#ping 11.0.0.2
```

Ερωτημα 3 και 4:

(εχουν οριστει και τα loopback)

R1:

```
R1#conf t
Enter configuration commands, one per line. End with CNTL/Z.
R1(config)#router ospf 1
R1(config-router)#router-id 1.1.1.1
R1(config-router)#network 10.0.0.5 0.0.0.255 area 0
R1(config-router)#network 12.0.0.6 0.0.0.255 area 0
R1(config-router)#end
R1#
*Mar 1 00:54:53.306: %SYS-5-CONFIG_I: Configured from console by console
R1#
*Mar 1 00:55:35.539: %OSPF-5-ADJCHG: Process 1, Nbr 2.2.2.2 on Ethernet0/0 from LOADING to FULL, Loading Done
R1#
*Mar 1 00:56:35.293: %OSPF-5-ADJCHG: Process 1, Nbr 3.3.3.3 on Ethernet1/0 from LOADING to FULL, Loading Done
R1#ping 2.2.2.2

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 2.2.2.2, timeout is 2 seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 20/36/61 ms
R1#ping 3.3.3.3

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 3.3.3.3, timeout is 2 seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 16/28/56 ms
R1#sh ip ospf neigh

Neighbor ID      Pri  State            Dead Time    Address          Interface
3.3.3.3           1    FULL/BDR        00:00:36    12.0.0.3        Ethernet1/0
2.2.2.2           1    FULL/BDR        00:00:33    10.0.0.2        Ethernet0/0
R1#
```

R2:

```

R2# conf t
Enter configuration commands, one per line. End with CNTL/Z.
R2(config)#router ospf 1
R2(config-router)#router-id 2.2.2.2
R2(config-router)#network 10.0.0.5 0.0.0.255 area 0
R2(config-router)#network 11.0.0.1
*Mar 1 00:55:36.645: %OSPF-5-ADJCHG: Process 1, Nbr 1.1.1.1 on Ethernet0/0 from LOADING to FULL, Loading Done
R2(config-router)#network 11.0.0.7 0.0.0.255 area 0
R2(config-router)#end
R2#
*Mar 1 00:55:59.999: %SYS-5-CONFIG_I: Configured from console by console
R2#
*Mar 1 00:56:54.196: %OSPF-5-ADJCHG: Process 1, Nbr 3.3.3.3 on Ethernet1/0 from LOADING to FULL, Loading Done
R2# ping 1.1.1.1

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 1.1.1.1, timeout is 2 seconds:
.....
Success rate is 0 percent (0/5)
R2# ping 3.3.3.3

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 3.3.3.3, timeout is 2 seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 8/22/36 ms
R2# sh ip ospf neigh

Neighbor ID      Pri  State          Dead Time    Address          Interface
3.3.3.3           1    FULL/BDR       00:00:32     11.0.0.3        Ethernet1/0
1.1.1.1           1    FULL/DR        00:00:34     10.0.0.1        Ethernet0/0
R2# ping 10.0.0.1

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 10.0.0.1, timeout is 2 seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 12/23/36 ms
R2#

```

## R3:

```

*Mar 1 00:56:51.290: %SYS-5-CONFIG_I: Configured from console by console
R3# conf t
Enter configuration commands, one per line. End with CNTL/Z.
R3(config)#router ospf 1
R3(config-router)#router-id
% Incomplete command.

R3(config-router)#router-id 3.3.3.3
R3(config-router)#network 12.0.0.6 0.0.0.255 area 0
R3(config-router)#
*Mar 1 00:56:36.511: %OSPF-5-ADJCHG: Process 1, Nbr 1.1.1.1 on Ethernet0/0 from LOADING to FULL, Loading Done
R3(config-router)#network 11.0.0.7 0.0.0.255 area 0
R3(config-router)#
*Mar 1 00:56:54.561: %OSPF-5-ADJCHG: Process 1, Nbr 2.2.2.2 on Ethernet1/0 from LOADING to FULL, Loading Done
R3(config-router)#end
R3#
*Mar 1 00:57:00.174: %SYS-5-CONFIG_I: Configured from console by console
R3# ping 1.1.1.1

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 1.1.1.1, timeout is 2 seconds:
.....
Success rate is 0 percent (0/5)
R3# ping 2.2.2.2

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 2.2.2.2, timeout is 2 seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 12/19/24 ms
R3# sh ip ospf neigh

Neighbor ID      Pri  State          Dead Time    Address          Interface
2.2.2.2           1    FULL/DR       00:00:35     11.0.0.2        Ethernet1/0
1.1.1.1           1    FULL/DR       00:00:31     12.0.0.1        Ethernet0/0
R3# ping 12.0.0.1

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 12.0.0.1, timeout is 2 seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 12/24/40 ms
R3#

```

## Ερωτημα 5:

## R1:

```

R1#show ip route
Codes: C - connected, S - static, R - RIP, M - mobile, B - BGP
      D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
      N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
      E1 - OSPF external type 1, E2 - OSPF external type 2
      i - IS-IS, su - IS-IS summary, L1 - IS-IS level-1, L2 - IS-IS level-2
      ia - IS-IS inter area, * - candidate default, U - per-user static route
      o - ODR, P - periodic downloaded static route

Gateway of last resort is not set

      1.0.0.0/32 is subnetted, 1 subnets
C        1.1.1.1 is directly connected, Loopback0
      2.0.0.0/32 is subnetted, 1 subnets
O        2.2.2.2 [110/11] via 10.0.0.2, 00:18:34, Ethernet0/0
      3.0.0.0/32 is subnetted, 1 subnets
O IA      3.3.3.3 [110/11] via 12.0.0.3, 00:17:35, Ethernet1/0
      10.0.0.0/24 is subnetted, 1 subnets
C        10.0.0.0 is directly connected, Ethernet0/0
      11.0.0.0/24 is subnetted, 1 subnets
O        11.0.0.0 [110/20] via 12.0.0.3, 00:17:17, Ethernet1/0
                  [110/20] via 10.0.0.2, 00:18:15, Ethernet0/0
      12.0.0.0/24 is subnetted, 1 subnets
C        12.0.0.0 is directly connected, Ethernet1/0
R1#

```

## R2:

```

R2#show ip route
Codes: C - connected, S - static, R - RIP, M - mobile, B - BGP
      D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
      N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
      E1 - OSPF external type 1, E2 - OSPF external type 2
      i - IS-IS, su - IS-IS summary, L1 - IS-IS level-1, L2 - IS-IS level-2
      ia - IS-IS inter area, * - candidate default, U - per-user static route
      o - ODR, P - periodic downloaded static route

Gateway of last resort is not set

      2.0.0.0/32 is subnetted, 1 subnets
C        2.2.2.2 is directly connected, Loopback0
      3.0.0.0/32 is subnetted, 1 subnets
O IA      3.3.3.3 [110/11] via 11.0.0.3, 00:18:34, Ethernet1/0
      10.0.0.0/24 is subnetted, 1 subnets
C        10.0.0.0 is directly connected, Ethernet0/0
      11.0.0.0/24 is subnetted, 1 subnets
C        11.0.0.0 is directly connected, Ethernet1/0
      12.0.0.0/24 is subnetted, 1 subnets
O        12.0.0.0 [110/20] via 11.0.0.3, 00:18:34, Ethernet1/0
                  [110/20] via 10.0.0.1, 00:19:50, Ethernet0/0
R2#

```

## R3:

```

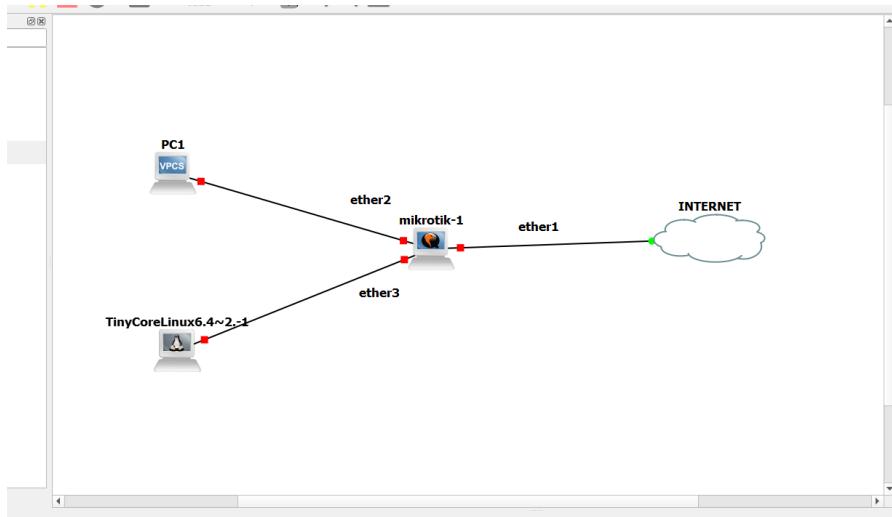
R3#show ip route
Codes: C - connected, S - static, R - RIP, M - mobile, B - BGP
      D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
      N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
      E1 - OSPF external type 1, E2 - OSPF external type 2
      i - IS-IS, su - IS-IS summary, L1 - IS-IS level-1, L2 - IS-IS level-2
      ia - IS-IS inter area, * - candidate default, U - per-user static route
      o - ODR, P - periodic downloaded static route

Gateway of last resort is not set

      2.0.0.0/32 is subnetted, 1 subnets
O        2.2.2.2 [110/11] via 11.0.0.2, 00:19:11, Ethernet1/0
      3.0.0.0/32 is subnetted, 1 subnets
C        3.3.3.3 is directly connected, Loopback0
      10.0.0.0/24 is subnetted, 1 subnets
O        10.0.0.0 [110/20] via 12.0.0.1, 00:19:26, Ethernet0/0
                  [110/20] via 11.0.0.2, 00:19:11, Ethernet1/0
      11.0.0.0/24 is subnetted, 1 subnets
C        11.0.0.0 is directly connected, Ethernet0/0
      12.0.0.0/24 is subnetted, 1 subnets
C        12.0.0.0 is directly connected, Ethernet0/0
R3#

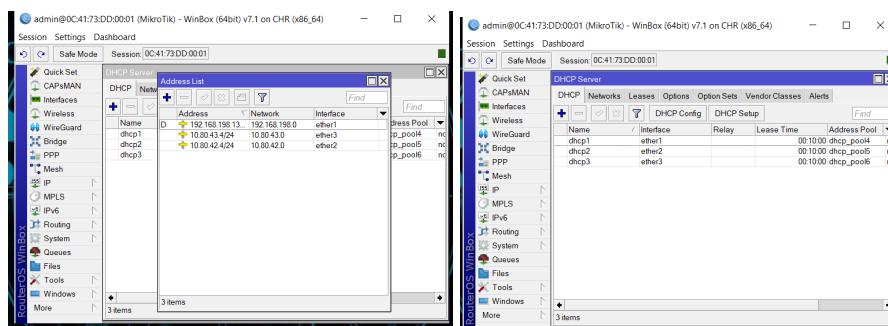
```

### ΑΣΚΗΣΗ 3



**ΣΗΜΕΙΩΣΗ:** χρησιμοποιησα και σαν βοηθημα το winbox για αναθέσεις και setup dhcp-server.

Παραθέτω και σκρινσοτ από το winbox:



ether2,ether3:

```
[admin@mikroTik] > ip address
[admin@mikroTik] /ip/address> print
Flags: D - DYNAMIC
Columns: ADDRESS, NETWORK, INTERFACE
# ADDRESS          NETWORK      INTERFACE
0  10.80.42.4/24   10.80.42.0   ether2
1  10.80.43.4/24   10.80.43.0   ether3
2  D 192.168.198.131/24 192.168.198.0   ether1
[admin@mikroTik] /ip/address> []
```

Nat sto ether3:

```
[admin@MikroTik] /ip> ..
[admin@MikroTik] > ip firewall nat
[admin@MikroTik] /ip/firewall/nat> add chain=srcnat action=masquerade out-interface=ether3
[admin@MikroTik] /ip/firewall/nat> [REDACTED]
```

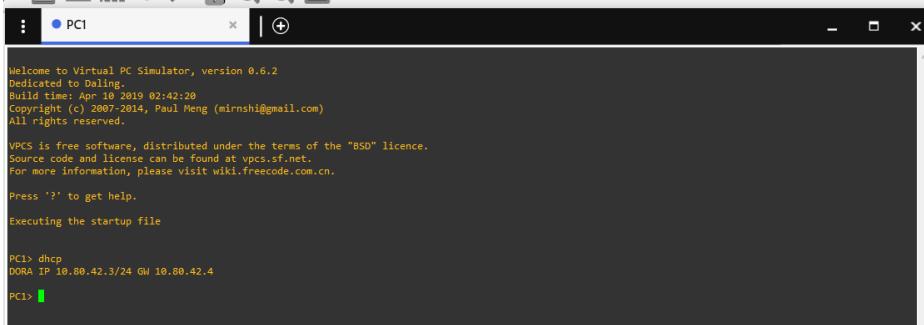
```
[admin@MikroTik] /ip/firewall/nat> print
Flags: X - disabled, I - invalid; D - dynamic
0  chain=srcnat action=masquerade out-interface=ether2

1  chain=srcnat action=masquerade out-interface=ether3
[admin@MikroTik] /ip/firewall/nat> [REDACTED]
```

## Dhcp-server ether2,ether3:

```
bad command name printy (line 1 column 1)
[admin@MikroTik] /ip/dhcp-server> print
Columns: NAME, INTERFACE, ADDRESS-POOL, LEASE-TIME
# NAME    INTERFACE   ADDRESS-POOL   LEASE-TIME
0 dhcp1   ether1     dhcp_pool4    10m
1 dhcp2   ether2     dhcp_pool5    10m
2 dhcp3   ether3     dhcp_pool6    10m
[admin@MikroTik] /ip/dhcp-server> [REDACTED]
```

## ΚΟΥΣΟΛΑ PC1:



```
Welcome to Virtual PC Simulator, version 0.6.2
Dedicated to Daling.
Build time: Apr 10 2010 02:42:28
Copyright (c) 2007-2014, Paul Meng (mirnshi@gmail.com)
All rights reserved.

VPCS is free software, distributed under the terms of the "BSD" licence.
Source code and license can be found at vpcs.sf.net.
For more information, please visit wiki.freecode.com.cn.

Press '?' to get help.

Executing the startup file

PC1> dhcp
DORA IP 10.88.42.3/24 GW 10.88.42.4
PC1> [REDACTED]
```

## Ερώτημα για PC:

```
PC1> ping 8.8.8.8
8.8.8.8 icmp_seq=1 timeout
8.8.8.8 icmp_seq=2 timeout
8.8.8.8 icmp_seq=3 timeout
8.8.8.8 icmp_seq=4 timeout
8.8.8.8 icmp_seq=5 timeout

PC1> trace 8.8.8.8 -r 1 -m 15
trace to 8.8.8.8, 15 hops max (ICMP), press Ctrl+C to stop
 1  10.88.42.4  1.085 ms  1.011 ms  2.241 ms
 2  * * *
 3  * * *
 4  * * *
 5  * * *
 6  * * *
 7  * * *
 8  * * *
 9  * * *
10  * * *
11  * * *
12  * * *
13  * * *
14  * * *
15  * * *

PC1> [REDACTED]
```

**ping 8.8.8.8:** ping an internet host by IPv4 Address

## Ping ? trace?

```
PC1> ping ?  
ping HOST [OPTION ...]  
Ping the network HOST. HOST can be an ip address or name  
Options:  
-1 ICMP mode, default  
-2 UDP mode  
-3 Raw mode  
-c count Packet count, default 5  
-D Set the Don't Fragment bit  
-f FLAG Tcp header FLAG [C|E|U|A|P|R|S|F]  
          bits [ 7 6 5 4 3 2 1 0 ]  
-l es Wait ms milliseconds between sending each packet  
-L size Data size, default 32  
-n protocol Use protocol in ping packets  
          1 - ICMP (default), 17 - UDP, 6 - TCP  
-p port Destination port  
-s port Source port  
-T ttl Set ttl, default 64  
-t Send packets until interrupted by Ctrl+C  
-w ms Wait ms milliseconds to receive the response  
  
Notes: 1. Using names requires DNS to be set.  
      2. Use Ctrl+C to stop the command.  
  
PC1> trace ?  
trace HOST [OPTION ...]  
Print the path packets take to the network HOST. HOST can be an ip address or  
name.  
Options:  
-P protocol Use protocol in trace packets  
          1 - icmp, 17 - udp (default), 6 - tcp  
-m ttl Maximum ttl, default 8  
  
Notes: 1. Using names requires DNS to be set.  
      2. Use Ctrl+C to stop the command.  
  
PC1> 
```

## Tinycore:

```
QEMU (TinyCoreLinux64-2.-1) - TightVNC Viewer
File Edit View Ctrl Alt Insert Search Help

( ' >')
) TC ( Core is distributed with ABSOLUTELY NO WARRANTY.
( _--_--\n) www.tinycorelinux.net

gn3@box:~$ ifconfig
eth0      Link encap:Ethernet HWaddr 0C:A5:EE:93:00:00
          inet addr:19.80.43.3 Bcast:19.80.43.255 Mask:255.255.255.0
          UP BROADCAST RUNNING MULTICAST MTU:1500 Metric:1
          RX packets:7 errors:0 dropped:0 overruns:0 frame:0
          TX packets:10 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1000
          RX bytes:1105 (1.0 KIB) TX bytes:2584 (2.5 KIB)

lo       Link encap:Local Loopback
          inet addr:127.0.0.1 Mask:255.0.0.0
          UP LOOPBACK RUNNING MTU:65536 Metric:1
          RX packets:0 errors:0 dropped:0 overruns:0 frame:0
          TX packets:0 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:0
          RX bytes:0 (0.0 B) TX bytes:0 (0.0 B)

gn3@box:~$
```

## Ερώτημα tinycore:

Φτάνει μεχρι το 30

```

gns3@box:~$ ping 8.8.8.8
PING 8.8.8.8 (8.8.8.8): 56 data bytes
...
--- 8.8.8.8 ping statistics ---
10 packets transmitted, 0 packets received, 100% packet loss
gns3@box:~$ traceroute 8.8.8.8 -l
traceroute to 8.8.8.8 (8.8.8.8), 30 hops max, 30 byte packets
1  10.80.43.4 (10.80.43.4)  0.010 ms  0.001 ms  0.973 ms
2  *  *  *
3  *  *  *
4  *  *  *
5  *  *  *
6  *  *  *
7  *  *  *
8  *  *  *
9  *  *  *
10  *  *  *
11  *  *  *
12  *  *  *
13  *  *  *
14  *  *  *
15  *  *  *
16  *  *  *
17  *  *^C
gns3@box:~$ _

```

PC1-Vpn:

```

PC1> ping 150.140.139.250 -P 6 -p 22
Connect 22@150.140.139.250 timeout
PC1>

```

6 = This forces the ping command to use IPv6

Κλεινω και ξανανοιγω vpn:



```

PC1> show ip
NAME      : PC1[1]
IP/MASK   : 10.80.42.3/24
GATEWAY   : 10.80.42.4
DNS       : 192.168.198.2
DHCP SERVER : 10.80.42.4
DHCP LEASE  : 568, 600/300/525
MAC       : 00:50:79:66:68:00
LPORT     : 10002
RHOST:PORT : 127.0.0.1:10003
MTU:      : 1500
PC1>

```

Tinycore:

```
[gns3@box:~$ nc -u 150.140.139.250 9000
Cpunt!
```

```
gns3@box:~$ nc -u 150.140.139.250 9000
```