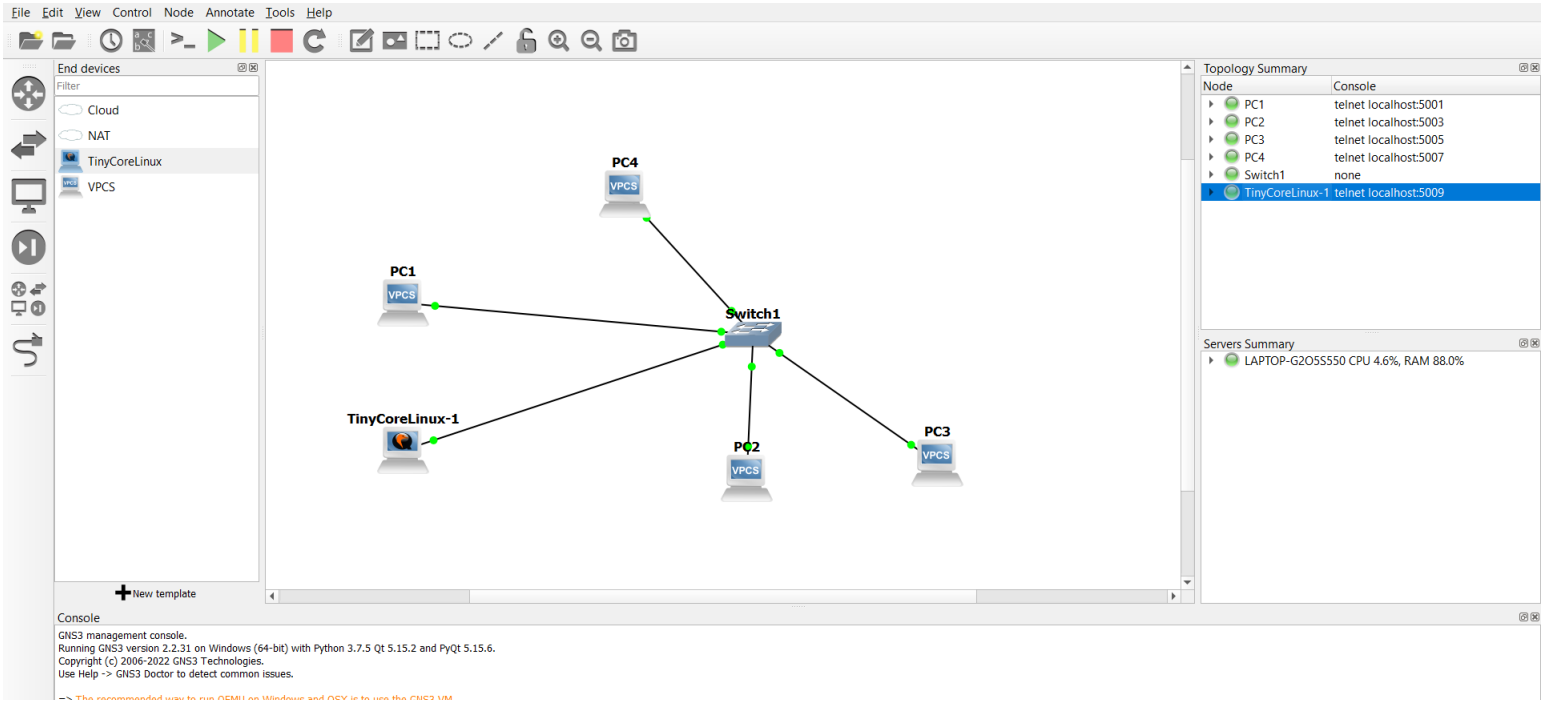
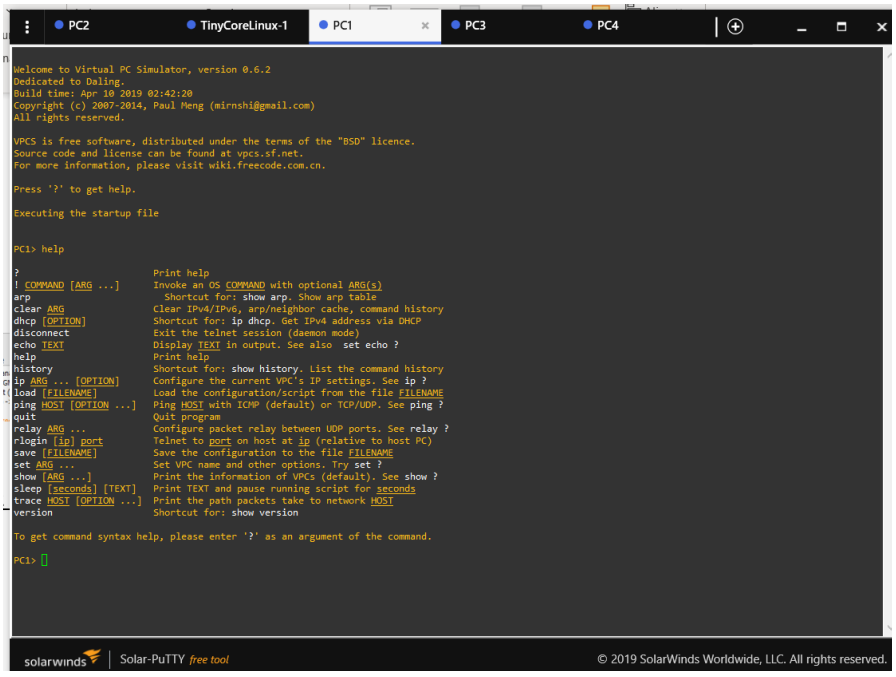
ΑΣΚΗΣΗ 1



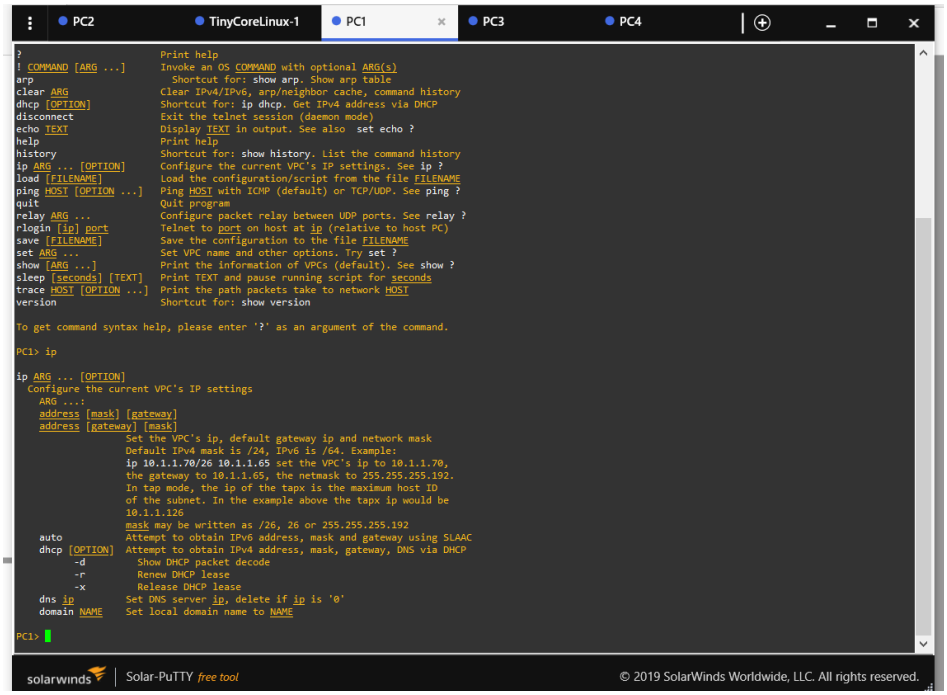
Ερώτημα 1

PC1->help



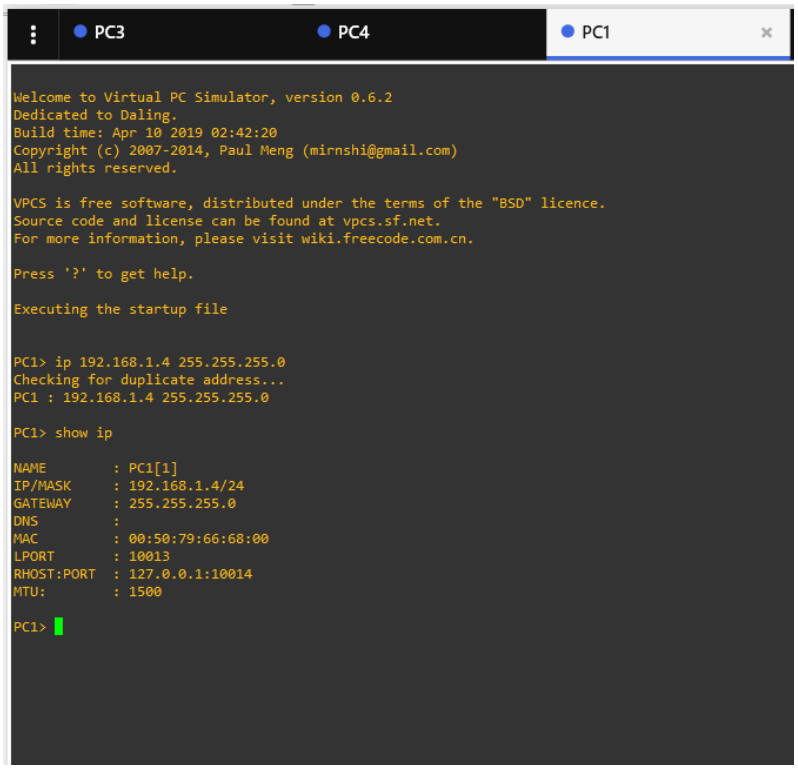
Ερώτημα 2

PC1->ip

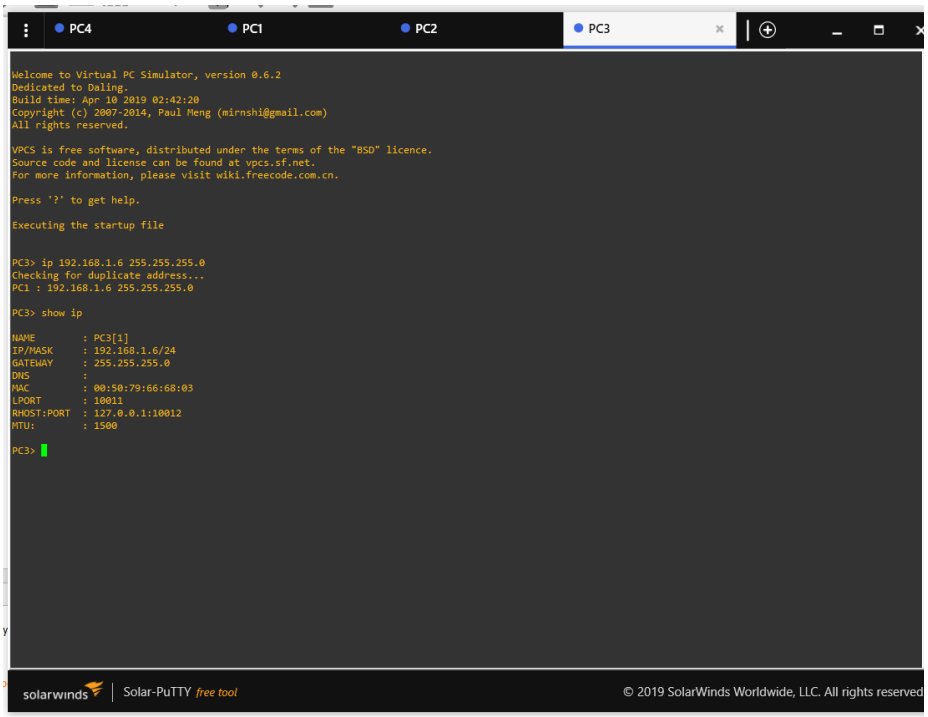


Ερώτημα 3

Χρησιμοποιησα ως deafault gateway: 255.255.255.0

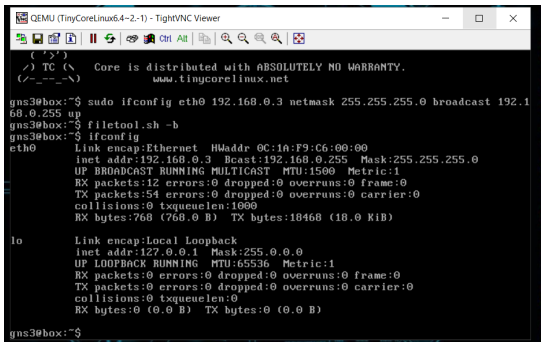



PC3
PC4
PC1
PC2
Welcome to Virtual PC Simulator, version 0.6.2
Dedicated to Daling.
Build time: Apr 10 2019 02:42:20
Copyright (c) 2007-2014, Paul Meng (mirnshi@gmail.com)
All rights reserved.
VPCS is free software, distributed under the terms of the "BSD" licence.
Source code and license can be found at vpcs.sf.net.
For more information, please visit wiki.freecode.com.cn.
Press '?' to get help.
Executing the startup file
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>


PC4
PC1
PC2
PC3
Welcome to Virtual PC Simulator, version 0.6.2
Dedicated to Daling.
Build time: Apr 10 2019 02:42:20
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
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
© 2019 SolarWinds Worldwide, LLC. All rights reserved

Ερώτημα 4

Περασμα ip address στο tinycorelinux

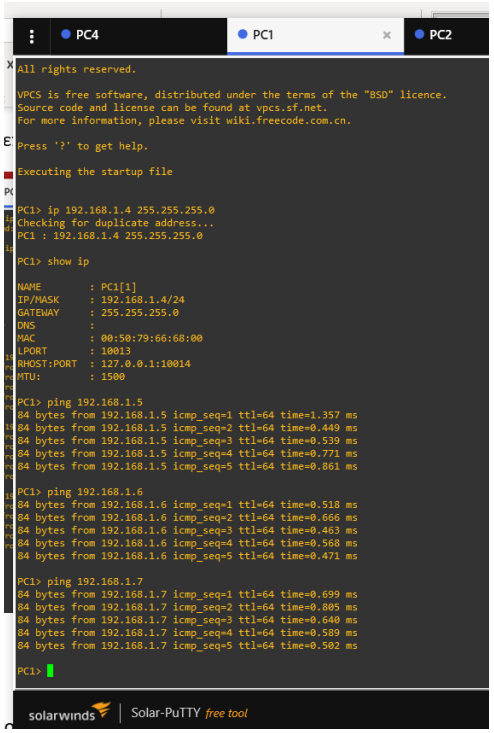


Ερώτημα 5

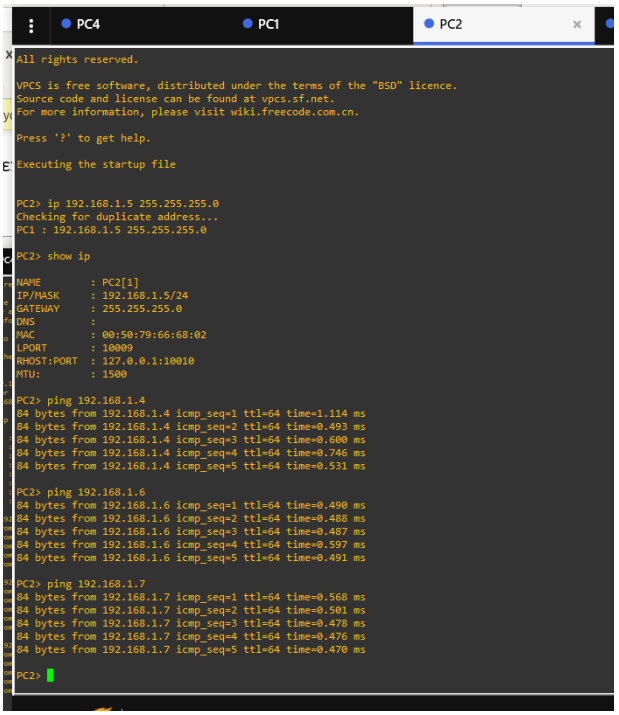
Εκτελεσει ping από PC1 προς τα υπολοιπα

Εκτελεσει ping από PC2 προς τα υπολοιπα

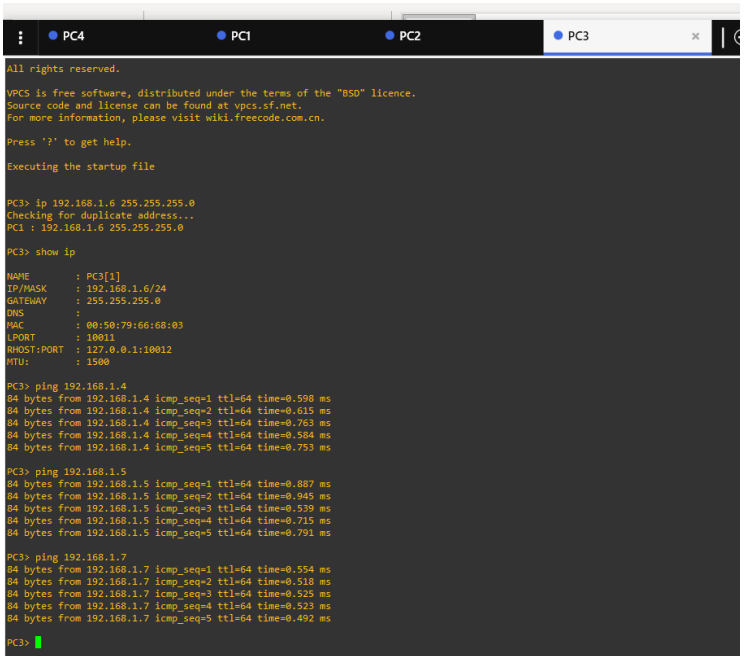
και βλεπω πως επικοινωνουν

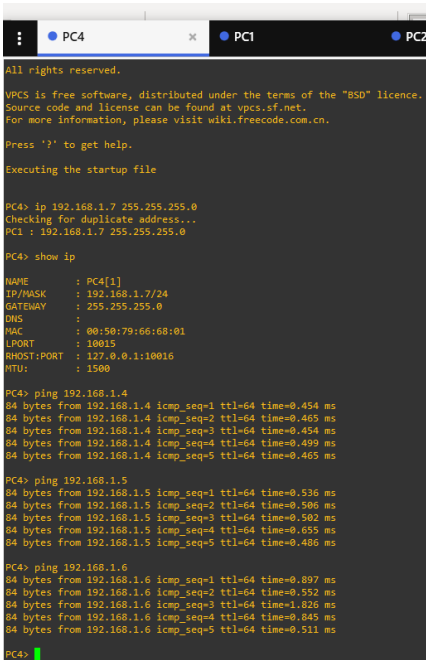


και βλεπω πως επικοινωνουν

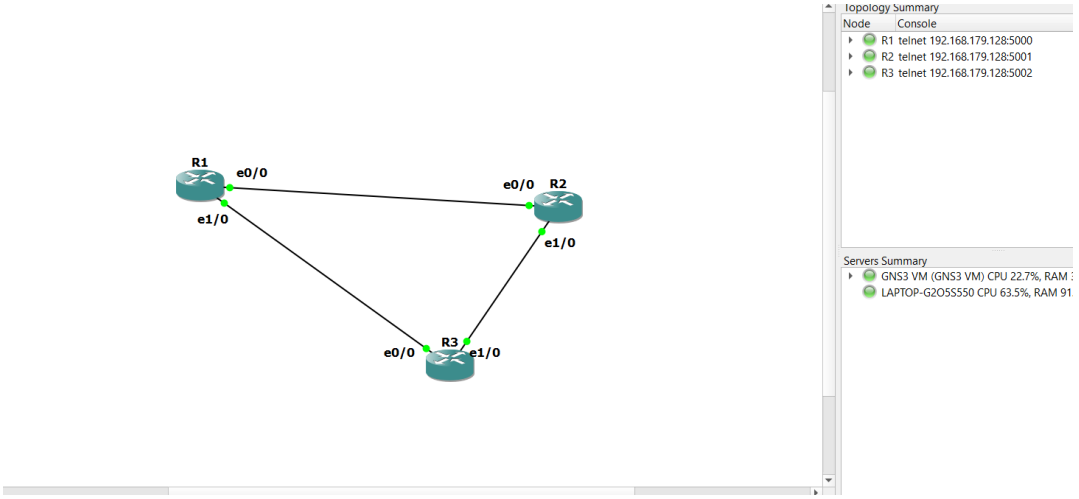


Αντιστοιχα τα αποτελεσματα για PC3-PC4 για επικοινωνια με τα υπολοιπα





ΑΣΚΗΣΗ 2



Ερωτημα 1:

R1:

```
*Mar  1 00:00:50.574: %CRYPTO-6-GDOI_ON_OFF: GDOI 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
```

```
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
Ethernet1/0 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:

```
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

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 10.0.0.2, timeout is 2 seconds:
.!!!!
Success rate is 80 percent (4/5), round-trip min/avg/max = 28/51/76 ms
R1#ping 12.0.0.3

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 12.0.0.3, timeout is 2 seconds:
.!!!!
Success rate is 80 percent (4/5), round-trip min/avg/max = 24/39/80 ms
R1#
```

R1-R2

R1-R3

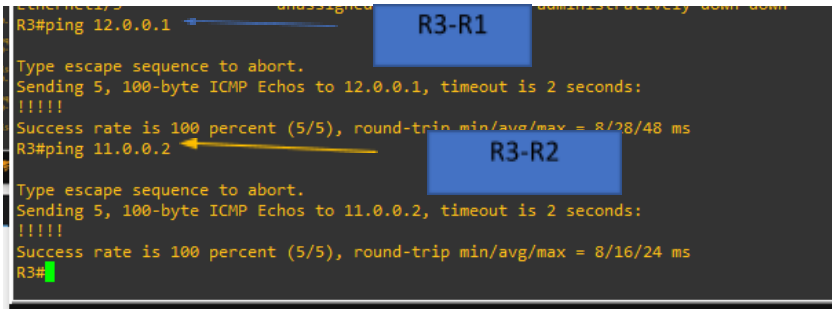
Ελεγχος Συνδεσιμοτητας από τον R2 προς τους R1-R3:

```
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 = 12/26/32 ms
R2#ping 11.0.0.3

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 11.0.0.3, timeout is 2 seconds:
.!!!!
Success rate is 80 percent (4/5), round-trip min/avg/max = 20/27/32 ms
R2#
```

R2-R1

[redacted]

Ελεγχος Συνδεσιμοτητας από τον R3 προς τους R1-R2:




```
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 = 8/28/48 ms
R3#ping 11.0.0.2

Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 11.0.0.2, timeout is 2 seconds:
!!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 8/16/24 ms
R3#
```

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.
*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:

```
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:

```
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#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#
```

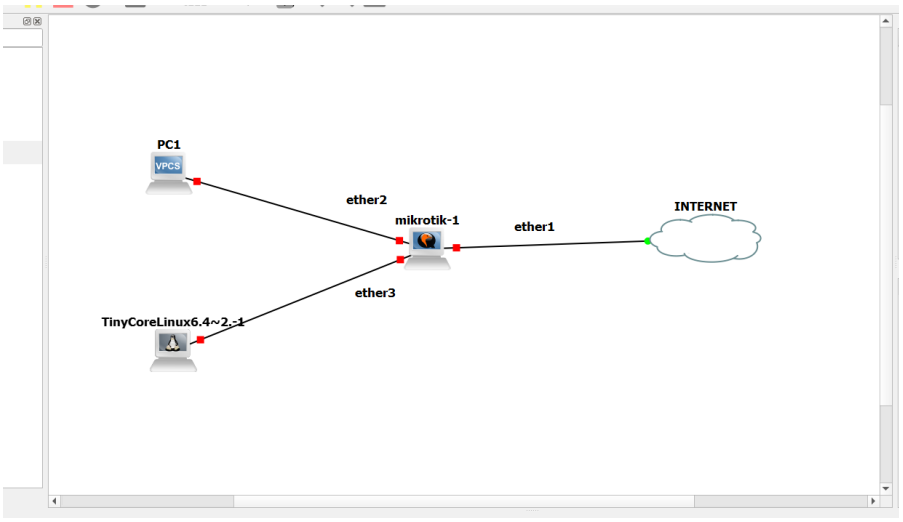
R2:

```
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:

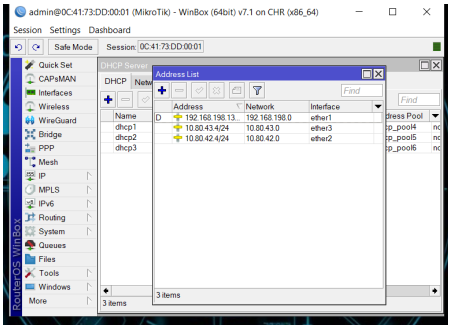
```
R3#show ip route
Codes: C - connected, S - static, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
       N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
       E1 - OSPF external type 1, E2 - OSPF external type 2
       i - IS-IS, 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, Ethernet1/0
     12.0.0.0/24 is subnetted, 1 subnets
C       12.0.0.0 is directly connected, Ethernet0/0
R3#
```

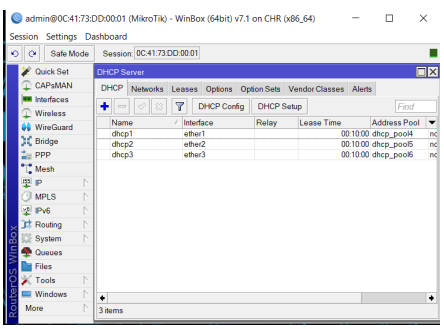
ΑΣΚΗΣΗ 3



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>
```

```
[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>
```

Dhcp-server ether2,ether3:

```
bad command name prihy (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>
```

κονσολα PC1:

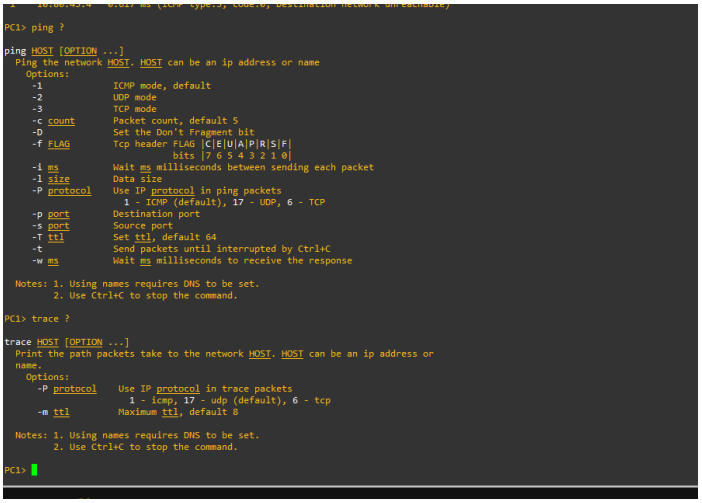
```
PC1

Welcome to Virtual PC Simulator, version 0.6.2
Dedicated to Daling.
Build time: Apr 10 2019 02:42:20
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 10.80.42.3/24 GW 10.80.42.4

PC1>
```

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 -P 1 -m 15
trace to 8.8.8.8, 15 hops max (ICMP), press Ctrl+C to stop
 1   10.80.42.4   1.005 ms  1.011 ms  2.241 ms
 2     *  *  *
 3     *  *  *
 4     *  *  *
 5     *  *  *
 6     *  *  *
 7     *  *  *
 8     *  *  *
 9     *  *  *
10     *  *  *
11     *  *  *
12     *  *  *
13     *  *  *
14     *  *  *
15     *  *  *

PC1>
```

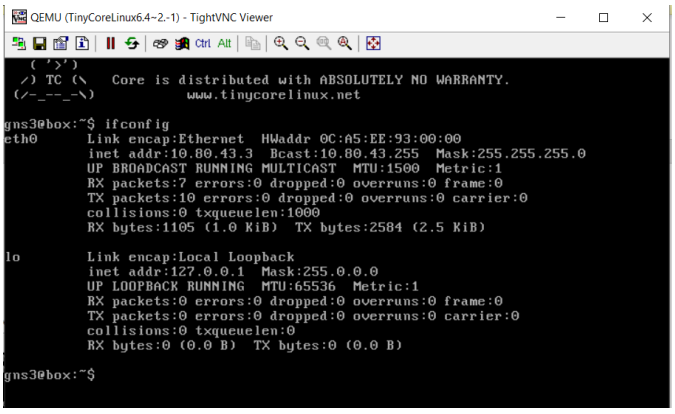
ping 8.8.8.8: ping an internet host by IPv4 Address

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              TCP 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|
      -i ms           Wait ms milliseconds between sending each packet
      -l size         Data size
      -P protocol     Use IP 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 IP 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>
```

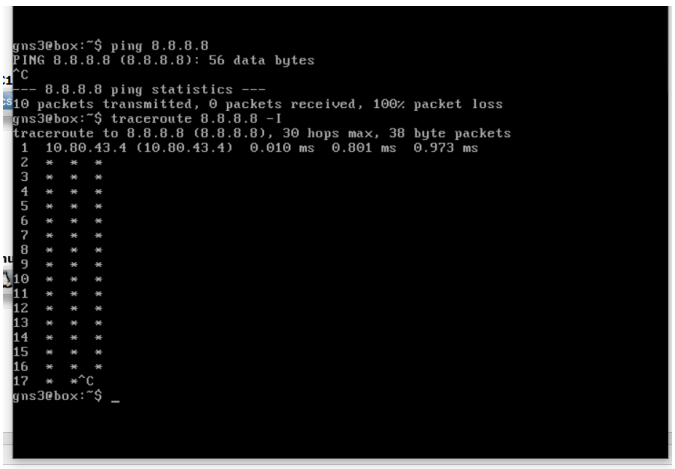
Tinycore:



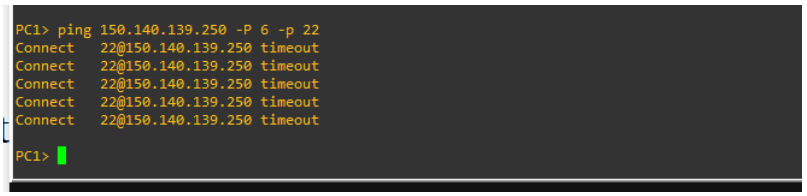
```
QEMU (TinyCoreLinux6.4~2.-1) - TightVNC Viewer
   ( '>')
  /) TC (\   Core is distributed with ABSOLUTELY NO WARRANTY.
 (/-_--_-\)           www.tinycorelinux.net

gns3@box:~$ ifconfig
eth0      Link encap:Ethernet  HWaddr 0C:A5:EE:93:00:00
          inet addr:10.80.43.3  Bcast:10.80.43.255  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)

gns3@box:~$
```

Ερώτημα tinycore:

Φτάνει μεχρι το 30

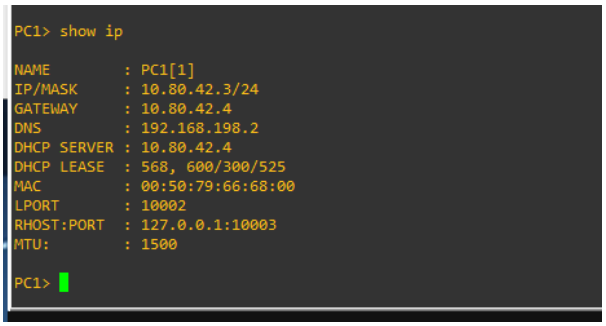


PC1-Vpn:

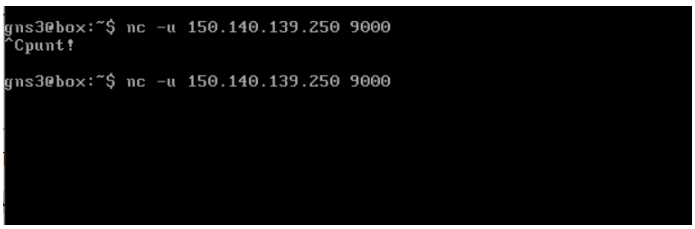


6 = This forces the ping command to use IPv6

Κλεινω και ξανανοιγω vpn:



Tinycore:


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