

ΔΙΚΤΥΑ ΥΠΟΛΟΓΙΣΤΩΝ

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ΑΚΑΔΗΜΑΪΚΟ ΕΤΟΣ: 2022-2023

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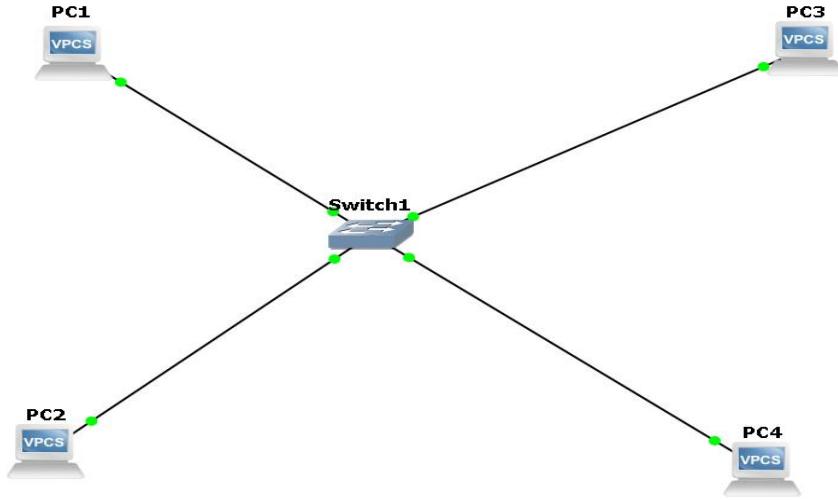
**1η Εργασία - Εισαγωγή στη
Χρήση GNS3**

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Kος Βλάχος

ΕΡΩΤΗΜΑΤΑ:

Τοπολογία:



1)Σε ένα εκ των PC εκτελέστε την εντολή help και δείτε όλη τη λίστα των υποστηριζόμενων εντολών:

```
PC1> help

?          Print help
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   Shortcut for: 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 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    Shortcut for: show version

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

PC1> [
```

2)Σε ένα εκ των PC εκτελέστε την εντολή ip και ελέγξτε τι παραμέτρους που χρειάζεται για να εκτελεστεί:

```
Welcome to Virtual PC Simulator, version 0.8.2
Dedicated to Daling.
Build time: Aug 23 2021 11:15:00
Copyright (c) 2007-2015, 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

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 255.255.255.192.
      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
      mask may be written as /26, 26 or 255.255.255.192
  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'
  dns6 ipv6     Set DNS server ipv6, delete if ipv6 is '0'
  domain NAME    Set local domain name to NAME

PC2>
```

3) Αναθέστε IP διευθύνσεις στο range 192.168.1.0/24 σε κάθε PC. Ελέγξετε με show ip το αποτέλεσμα της ανάθεσης:

PC1: 192.168.1.1

```
PC1> ip 192.168.1.1
Checking for duplicate address...
PC1 : 192.168.1.1 255.255.255.0
```

PC2: 192.168.1.2

```
PC2>
PC2> ip 192.168.1.2
Checking for duplicate address...
PC2 : 192.168.1.2 255.255.255.0
```

PC3: 192.168.1.3

```
ip 192.168.1.3
Checking for duplicate address...
PC3 : 192.168.1.3 255.255.255.0
```

PC4: 192.168.1.4

```
PC4> ip 192.168.1.4
Checking for duplicate address...
PC4 : 192.168.1.4 255.255.255.0
```

4) Εκτελέστε από κάθε PC προς τα άλλα την εντολή ping για να ελέγξετε εάν οι υπολογιστές επικοινωνούν μεταξύ τους:

Από PC1:

```
PC1> ping 192.168.1.2
84 bytes from 192.168.1.2 icmp_seq=1 ttl=64 time=0.357 ms
84 bytes from 192.168.1.2 icmp_seq=2 ttl=64 time=0.465 ms
84 bytes from 192.168.1.2 icmp_seq=3 ttl=64 time=0.472 ms
84 bytes from 192.168.1.2 icmp_seq=4 ttl=64 time=0.488 ms
84 bytes from 192.168.1.2 icmp_seq=5 ttl=64 time=0.494 ms

PC1> ping 192.168.1.3
84 bytes from 192.168.1.3 icmp_seq=1 ttl=64 time=0.286 ms
84 bytes from 192.168.1.3 icmp_seq=2 ttl=64 time=0.500 ms
84 bytes from 192.168.1.3 icmp_seq=3 ttl=64 time=0.529 ms
84 bytes from 192.168.1.3 icmp_seq=4 ttl=64 time=0.487 ms
84 bytes from 192.168.1.3 icmp_seq=5 ttl=64 time=0.530 ms

PC1> ping 192.168.1.4
84 bytes from 192.168.1.4 icmp_seq=1 ttl=64 time=0.520 ms
84 bytes from 192.168.1.4 icmp_seq=2 ttl=64 time=0.489 ms
84 bytes from 192.168.1.4 icmp_seq=3 ttl=64 time=0.374 ms
84 bytes from 192.168.1.4 icmp_seq=4 ttl=64 time=0.599 ms
84 bytes from 192.168.1.4 icmp_seq=5 ttl=64 time=0.368 ms
```

Από PC2:

```
PC2> ping 192.168.1.1
84 bytes from 192.168.1.1 icmp_seq=1 ttl=64 time=0.398 ms
84 bytes from 192.168.1.1 icmp_seq=2 ttl=64 time=0.691 ms
84 bytes from 192.168.1.1 icmp_seq=3 ttl=64 time=0.505 ms
84 bytes from 192.168.1.1 icmp_seq=4 ttl=64 time=0.514 ms
84 bytes from 192.168.1.1 icmp_seq=5 ttl=64 time=0.577 ms

PC2> ping 192.168.1.3
84 bytes from 192.168.1.3 icmp_seq=1 ttl=64 time=0.526 ms
84 bytes from 192.168.1.3 icmp_seq=2 ttl=64 time=0.467 ms
84 bytes from 192.168.1.3 icmp_seq=3 ttl=64 time=0.507 ms
84 bytes from 192.168.1.3 icmp_seq=4 ttl=64 time=0.477 ms
84 bytes from 192.168.1.3 icmp_seq=5 ttl=64 time=0.535 ms

PC2> ping 192.168.1.4
84 bytes from 192.168.1.4 icmp_seq=1 ttl=64 time=0.240 ms
84 bytes from 192.168.1.4 icmp_seq=2 ttl=64 time=0.560 ms
84 bytes from 192.168.1.4 icmp_seq=3 ttl=64 time=0.551 ms
84 bytes from 192.168.1.4 icmp_seq=4 ttl=64 time=0.526 ms
84 bytes from 192.168.1.4 icmp_seq=5 ttl=64 time=0.483 ms
```

Από PC3:

```
PC3> ping 192.168.1.1  
  
84 bytes from 192.168.1.1 icmp_seq=1 ttl=64 time=0.239 ms  
84 bytes from 192.168.1.1 icmp_seq=2 ttl=64 time=0.573 ms  
84 bytes from 192.168.1.1 icmp_seq=3 ttl=64 time=0.527 ms  
84 bytes from 192.168.1.1 icmp_seq=4 ttl=64 time=0.562 ms  
84 bytes from 192.168.1.1 icmp_seq=5 ttl=64 time=0.527 ms  
  
PC3> ping 192.168.1.2  
  
84 bytes from 192.168.1.2 icmp_seq=1 ttl=64 time=0.449 ms  
84 bytes from 192.168.1.2 icmp_seq=2 ttl=64 time=0.461 ms  
84 bytes from 192.168.1.2 icmp_seq=3 ttl=64 time=0.499 ms  
84 bytes from 192.168.1.2 icmp_seq=4 ttl=64 time=0.548 ms  
84 bytes from 192.168.1.2 icmp_seq=5 ttl=64 time=0.528 ms  
  
PC3> ping 192.168.1.4  
  
84 bytes from 192.168.1.4 icmp_seq=1 ttl=64 time=0.295 ms  
84 bytes from 192.168.1.4 icmp_seq=2 ttl=64 time=0.510 ms  
84 bytes from 192.168.1.4 icmp_seq=3 ttl=64 time=0.495 ms  
84 bytes from 192.168.1.4 icmp_seq=4 ttl=64 time=0.675 ms  
84 bytes from 192.168.1.4 icmp_seq=5 ttl=64 time=0.475 ms
```

Από PC4:

```
PC4> ping 192.168.1.1  
  
84 bytes from 192.168.1.1 icmp_seq=1 ttl=64 time=0.397 ms  
84 bytes from 192.168.1.1 icmp_seq=2 ttl=64 time=0.539 ms  
84 bytes from 192.168.1.1 icmp_seq=3 ttl=64 time=0.469 ms  
84 bytes from 192.168.1.1 icmp_seq=4 ttl=64 time=0.542 ms  
84 bytes from 192.168.1.1 icmp_seq=5 ttl=64 time=0.465 ms  
  
PC4> ping 192.168.1.2  
  
84 bytes from 192.168.1.2 icmp_seq=1 ttl=64 time=0.230 ms  
84 bytes from 192.168.1.2 icmp_seq=2 ttl=64 time=0.343 ms  
84 bytes from 192.168.1.2 icmp_seq=3 ttl=64 time=0.566 ms  
84 bytes from 192.168.1.2 icmp_seq=4 ttl=64 time=0.489 ms  
84 bytes from 192.168.1.2 icmp_seq=5 ttl=64 time=0.488 ms  
  
PC4> ping 192.168.1.3  
  
84 bytes from 192.168.1.3 icmp_seq=1 ttl=64 time=0.529 ms  
84 bytes from 192.168.1.3 icmp_seq=2 ttl=64 time=0.730 ms  
84 bytes from 192.168.1.3 icmp_seq=3 ttl=64 time=0.538 ms  
84 bytes from 192.168.1.3 icmp_seq=4 ttl=64 time=0.429 ms  
84 bytes from 192.168.1.3 icmp_seq=5 ttl=64 time=0.617 ms
```

ΤΕΛΟΣ ΑΝΑΦΟΡΑΣ

