

## Lab 11

Class A 255.0.0.0

Class B 255.255.0.0

Class C 255.255.255.0

For router

enable

configure terminal

interface FastEthernet1/0

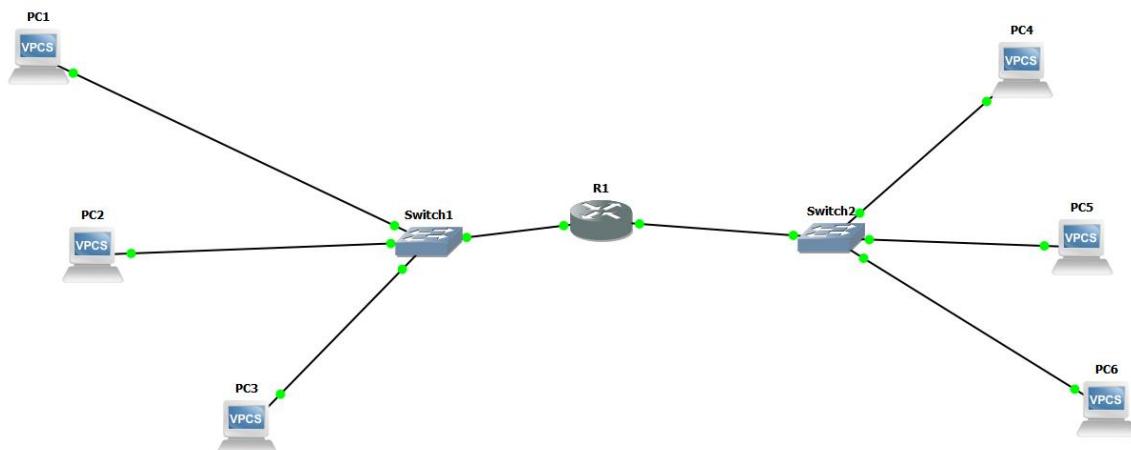
ip address 192.168.0.1 255.255.255.0

no shutdown

exit

exit

show ip interface brief



```

[ RI ] [ PCI ] | + 

Connected to Dynamips 'RI' (ID 1, type c7200) - Console port
Fast Ethernet 0/0 is present.
-UDOWN: Interface FastEthernet0/0, changed state to up
*Nov 17 12:09:24.659: %LINK-3-UPDOWN: Interface Ethernet1/0, changed state to up
*Nov 17 12:09:24.963: %LINK-3-UPDOWN: Interface Ethernet1/1, changed state to up
*Nov 17 12:09:24.967: %LINK-3-UPDOWN: Interface Ethernet1/2, changed state to up
*Nov 17 12:09:24.967: %LINK-3-UPDOWN: Interface Ethernet1/3, changed state to up
*Nov 17 12:09:25.027: %SYS-5-CONFIG_I: Configured from memory by console
*Nov 17 12:09:25.119: %SYS-5-RESTART: System restarted --
Cisco IOS Software, 7200 Software (C7200-ADVENTERPRISEK9-M), Version 12.4(24)T5,
 RELEASE SOFTWARE (fc1)
Technical Support: http://www.cisco.com/techsupport
Copyright (c) 1998-2011 by Cisco Systems, Inc
Compiled Fri 04-Mar-11 06:49 by prod_rel_team
*Nov 17 12:09:25.119: %SNMP-5-COLDSTART: SNMP agent on host RI is undergoing a cold start
*Nov 17 12:09:25.147: %CRPTO-6-SAON: ON OFF, ISAOFF is OFF
*Nov 17 12:09:25.147: %CRPTO-6-GOOL: OFF OFF, SGDOL is OFF
*Nov 17 12:09:25.971: %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to down
*Nov 17 12:09:25.971: %LINEPROTO-5-UPDOWN: Line protocol on Interface Ethernet1/0, changed state to down
*Nov 17 12:09:25.975: %LINEPROTO-5-UPDOWN: Line protocol on Interface Ethernet1/1, changed state to down
*Nov 17 12:09:25.975: %LINEPROTO-5-UPDOWN: Line protocol on Interface Ethernet1/2, changed state to down
*Nov 17 12:09:25.975: %LINEPROTO-5-UPDOWN: Line protocol on Interface Ethernet1/3, changed state to down
*Nov 17 12:09:27.027: %LINK-5-CHANGED: Interface FastEthernet0/0, changed state to administratively down
*Nov 17 12:09:27.031: %LINK-5-CHANGED: Interface Ethernet1/0, changed state to administratively down
*Nov 17 12:09:27.031: %LINK-5-CHANGED: Interface Ethernet1/1, changed state to administratively down
*Nov 17 12:09:27.031: %LINK-5-CHANGED: Interface Ethernet1/2, changed state to administratively down
*Nov 17 12:09:27.031: %LINK-5-CHANGED: Interface Ethernet1/3, changed state to administratively down
R1enables
R1configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
R1(config)#interface FastEthernet0/0
% Incomplete command.

R1(config)#interface FastEthernet0/0
R1(config-if)#ip address 192.168.0.4 255.255.255.0
R1(config-if)#no shutdown
R1(config-if)#
*Nov 17 12:13:59.935: %LINK-3-UPDOWN: Interface FastEthernet0/0, changed state to up
o up
*Nov 17 12:14:00.935: %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up
R1(config-if)#
R1(config-if)#
R1(config-if)#
*Nov 17 12:14:24.123: %SYS-5-CONFIG_I: Configured from console by console
R1enables
R1configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
R1(config)#interface FastEthernet0/0
% Incomplete command.

R1(config)#interface FastEthernet0/0
R1(config-if)#ip address 192.168.0.4 255.255.255.0
R1(config-if)#no shutdown
R1(config-if)#
*Nov 17 12:13:59.935: %LINK-3-UPDOWN: Interface FastEthernet0/0, changed state to up
*Nov 17 12:14:00.935: %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up
R1(config-if)#
R1(config-if)#
R1(config-if)#
*Nov 17 12:14:24.123: %SYS-5-CONFIG_I: Configured from console by console
R1enables
R1configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
R1(config)#interface FastEthernet0/0
R1(config-if)#
R1(config-if)#
R1(config-if)#
*Nov 17 12:19:05.251: %LINK-3-UPDOWN: Interface Ethernet1/0, changed state to up
*Nov 17 12:19:06.251: %LINEPROTO-5-UPDOWN: Line protocol on Interface Ethernet1/0, changed state to up
R1(config-if)#
R1(config-if)#
R1(config-if)#
*Nov 17 12:19:19.759: %SYS-5-CONFIG_I: Configured from console by console
R1#show ip interface brief
Interface          IP-Address      OK? Method Status       Prot
Fastethernet0/0    192.168.0.4    YES manual up        up
Ethernet1/0         192.168.1.7    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#

```

```

[ RI ] [ PCI ] | + 

dministratively down
*Nov 17 12:09:27.031: %LINK-5-CHANGED: Interface Ethernet1/1, changed state to a dministratively down
*Nov 17 12:09:27.031: %LINK-5-CHANGED: Interface Ethernet1/2, changed state to a dministratively down
*Nov 17 12:09:27.031: %LINK-5-CHANGED: Interface Ethernet1/3, changed state to a dministratively down
R1enables
R1configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
R1(config)#interface FastEthernet0/0
% Incomplete command.

R1(config)#interface FastEthernet0/0
R1(config-if)#ip address 192.168.0.4 255.255.255.0
R1(config-if)#no shutdown
R1(config-if)#
*Nov 17 12:13:59.935: %LINK-3-UPDOWN: Interface FastEthernet0/0, changed state to up
*Nov 17 12:14:00.935: %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up
R1(config-if)#
R1(config-if)#
R1(config-if)#
*Nov 17 12:14:24.123: %SYS-5-CONFIG_I: Configured from console by console
R1enables
R1configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
R1(config)#interface FastEthernet0/0
R1(config-if)#
R1(config-if)#
R1(config-if)#
*Nov 17 12:19:05.251: %LINK-3-UPDOWN: Interface Ethernet1/0, changed state to up
*Nov 17 12:19:06.251: %LINEPROTO-5-UPDOWN: Line protocol on Interface Ethernet1/0, changed state to up
R1(config-if)#
R1(config-if)#
R1(config-if)#
*Nov 17 12:19:19.759: %SYS-5-CONFIG_I: Configured from console by console
R1#show ip interface brief
Interface          IP-Address      OK? Method Status       Prot
Fastethernet0/0    192.168.0.4    YES manual up        up
Ethernet1/0         192.168.1.7    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#

```

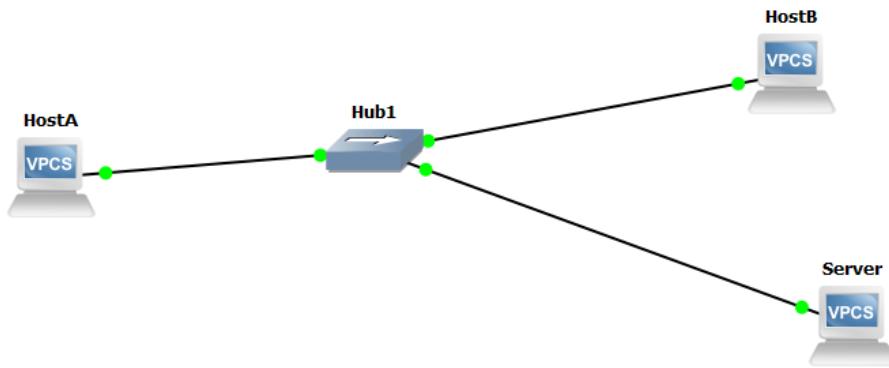
subnet mask and ping PC5

from PC1.

```
PC1> ping 192.168.1.5
84 bytes from 192.168.1.5 icmp_seq=1 ttl=63 time=46.551 ms
84 bytes from 192.168.1.5 icmp_seq=2 ttl=63 time=31.011 ms
84 bytes from 192.168.1.5 icmp_seq=3 ttl=63 time=31.125 ms
84 bytes from 192.168.1.5 icmp_seq=4 ttl=63 time=30.669 ms
84 bytes from 192.168.1.5 icmp_seq=5 ttl=63 time=30.896 ms

PC1> [REDACTED]
```

Task 2



HostA>

```
HostA> ip 192.168.0.35 255.255.255.0 192.168.0.1
Checking for duplicate address...
PC1 : 192.168.0.35 255.255.255.0 gateway 192.168.0.1

HostA> show ip

NAME      : HostA[1]
IP/MASK   : 192.168.0.35/24
GATEWAY   : 192.168.0.1
DNS       :
MAC       : 00:50:79:66:68:00
LPORT     : 10006
RHOST:PORT : 127.0.0.1:10007
MTU:      : 1500

HostA> [REDACTED]
```

HostB>

```
HostB> ip 192.168.0.1 255.255.255.0
Checking for duplicate address...
PC1 : 192.168.0.1 255.255.255.0

HostB> show ip

NAME      : HostB[1]
IP/MASK   : 192.168.0.1/24
GATEWAY   : 255.255.255.0
DNS       :
MAC       : 00:50:79:66:68:05
LPORT     : 10008
RHOST:PORT : 127.0.0.1:10009
MTU:      : 1500

HostB> [REDACTED]
```

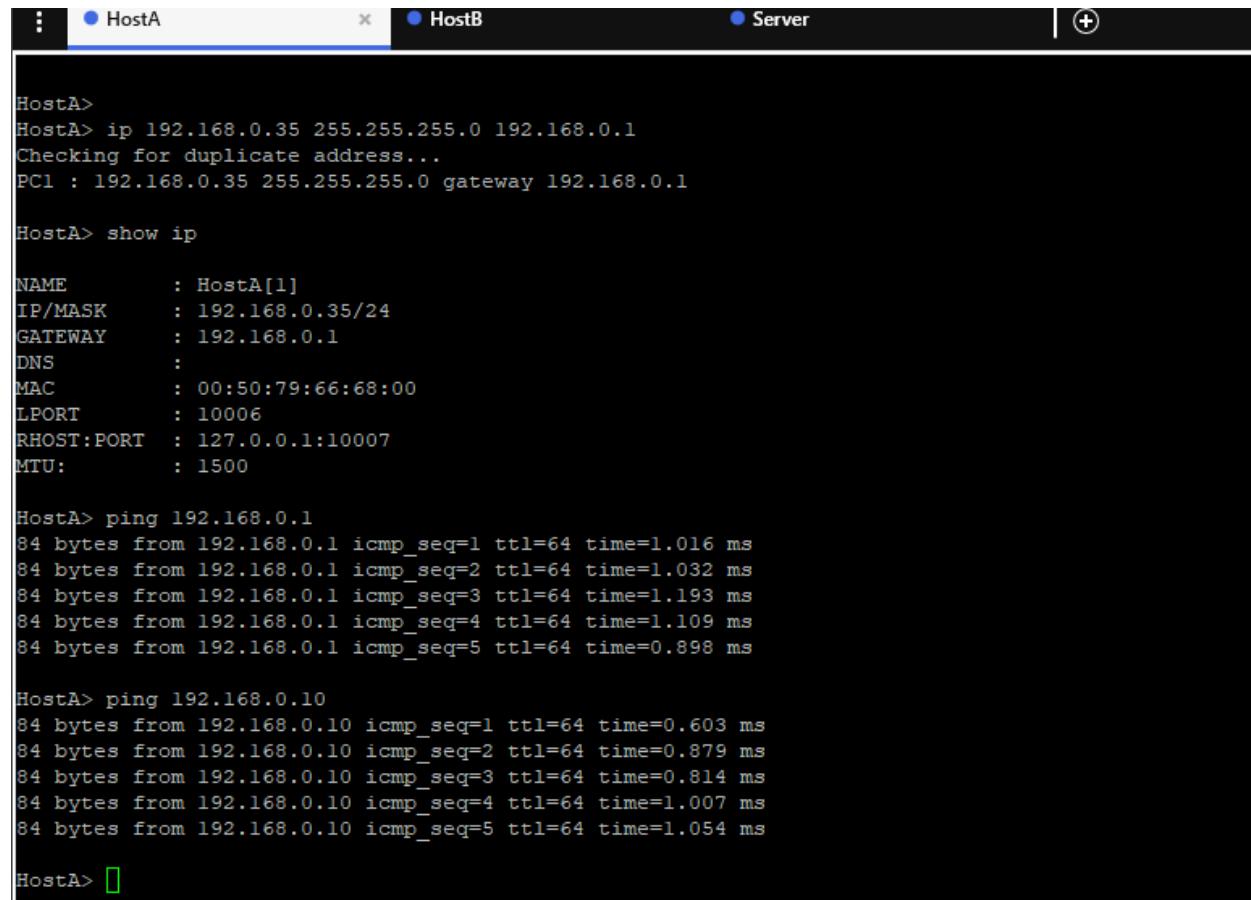
```
Server> ip 192.168.0.10 255.255.255.0 192.168.0.1
Checking for duplicate address...
PCL : 192.168.0.10 255.255.255.0 gateway 192.168.0.1
```

```
Server> show ip
```

```
NAME      : Server[1]
IP/MASK   : 192.168.0.10/24
GATEWAY   : 192.168.0.1
DNS       :
MAC       : 00:50:79:66:68:03
LPORT     : 10010
RHOST:PORT : 127.0.0.1:10011
MTU:      : 1500
```

```
Server> [ ]
```

A->B then server



```
HostA>
HostA> ip 192.168.0.35 255.255.255.0 192.168.0.1
Checking for duplicate address...
PCL : 192.168.0.35 255.255.255.0 gateway 192.168.0.1

HostA> show ip

NAME      : HostA[1]
IP/MASK   : 192.168.0.35/24
GATEWAY   : 192.168.0.1
DNS       :
MAC       : 00:50:79:66:68:00
LPORT     : 10006
RHOST:PORT : 127.0.0.1:10007
MTU:      : 1500

HostA> ping 192.168.0.1
84 bytes from 192.168.0.1 icmp_seq=1 ttl=64 time=1.016 ms
84 bytes from 192.168.0.1 icmp_seq=2 ttl=64 time=1.032 ms
84 bytes from 192.168.0.1 icmp_seq=3 ttl=64 time=1.193 ms
84 bytes from 192.168.0.1 icmp_seq=4 ttl=64 time=1.109 ms
84 bytes from 192.168.0.1 icmp_seq=5 ttl=64 time=0.898 ms

HostA> ping 192.168.0.10
84 bytes from 192.168.0.10 icmp_seq=1 ttl=64 time=0.603 ms
84 bytes from 192.168.0.10 icmp_seq=2 ttl=64 time=0.879 ms
84 bytes from 192.168.0.10 icmp_seq=3 ttl=64 time=0.814 ms
84 bytes from 192.168.0.10 icmp_seq=4 ttl=64 time=1.007 ms
84 bytes from 192.168.0.10 icmp_seq=5 ttl=64 time=1.054 ms

HostA> [ ]
```

### Host B to A then server

```
HostB> show ip

NAME      : HostB[1]
IP/MASK   : 192.168.0.1/24
GATEWAY   : 255.255.255.0
DNS       :
MAC       : 00:50:79:66:68:05
LPORT     : 10008
RHOST:PORT : 127.0.0.1:10009
MTU:      : 1500

HostB> ping 192.168.0.35
84 bytes from 192.168.0.35 icmp_seq=1 ttl=64 time=0.330 ms
84 bytes from 192.168.0.35 icmp_seq=2 ttl=64 time=0.349 ms
84 bytes from 192.168.0.35 icmp_seq=3 ttl=64 time=1.211 ms
84 bytes from 192.168.0.35 icmp_seq=4 ttl=64 time=1.505 ms
84 bytes from 192.168.0.35 icmp_seq=5 ttl=64 time=1.510 ms

HostB> ping 192.168.0.10
84 bytes from 192.168.0.10 icmp_seq=1 ttl=64 time=1.682 ms
84 bytes from 192.168.0.10 icmp_seq=2 ttl=64 time=1.819 ms
84 bytes from 192.168.0.10 icmp_seq=3 ttl=64 time=1.964 ms
84 bytes from 192.168.0.10 icmp_seq=4 ttl=64 time=2.247 ms
84 bytes from 192.168.0.10 icmp_seq=5 ttl=64 time=1.883 ms

HostB> █
```

### Server to hostA to hostB

```
Press '?' to get help.

Executing the startup file

Server> ip 192.168.0.10 255.255.255.0 192.168.0.1
Checking for duplicate address...
PC1 : 192.168.0.10 255.255.255.0 gateway 192.168.0.1

Server> show ip

NAME      : Server[1]
IP/MASK   : 192.168.0.10/24
GATEWAY   : 192.168.0.1
DNS       :
MAC       : 00:50:79:66:68:03
LPORT     : 10010
RHOST:PORT : 127.0.0.1:10011
MTU:      : 1500

Server> ping 192.168.0.35
84 bytes from 192.168.0.35 icmp_seq=1 ttl=64 time=1.134 ms
84 bytes from 192.168.0.35 icmp_seq=2 ttl=64 time=1.090 ms
84 bytes from 192.168.0.35 icmp_seq=3 ttl=64 time=1.405 ms
84 bytes from 192.168.0.35 icmp_seq=4 ttl=64 time=1.024 ms
84 bytes from 192.168.0.35 icmp_seq=5 ttl=64 time=0.942 ms

Server> ping 192.168.0.1
84 bytes from 192.168.0.1 icmp_seq=1 ttl=64 time=1.066 ms
84 bytes from 192.168.0.1 icmp_seq=2 ttl=64 time=1.118 ms
84 bytes from 192.168.0.1 icmp_seq=3 ttl=64 time=1.348 ms
84 bytes from 192.168.0.1 icmp_seq=4 ttl=64 time=0.877 ms
84 bytes from 192.168.0.1 icmp_seq=5 ttl=64 time=1.163 ms

Server> █
```

### Third task

```
HostB> ip 192.168.0.1 255.255.255.224
Checking for duplicate address...
PC1 : 192.168.0.1 255.255.255.224

HostB> █
```

What is the effect of changing the subnet mask on the network?

```

HostA>
HostA> ip 192.168.0.35 255.255.255.224 192.168.0.1
not same subnet

HostA> ip 192.168.0.35 255.255.255.224
Checking for duplicate address...
PC1 : 192.168.0.35 255.255.255.224

HostA> ping 192.168.0.1
host (255.255.255.224) not reachable

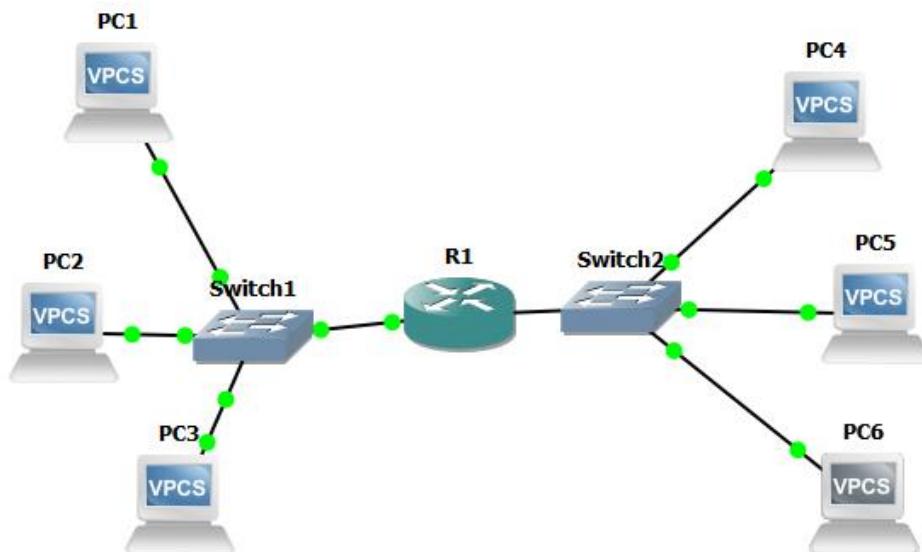
HostA> [REDACTED]

```

We do not have enough space to connect more hosts as class c requires less host connection and more networks can be connected.

#### Post lab

Class B does not allow to v=connect more than 1 network so we are able to ping within that network but not any other network connected to the router



R1

```
R1(config)#interface Ethernet1/0
R1(config-if)#ip address 192.168.1.7 255.255.0.0
R1(config-if)#no shutdown
% 192.168.0.0 overlaps with FastEthernet0/0
Ethernet1/0: incorrect IP address assignment
R1(config-if)#ip address 192.168.1.7 255.255.0.0
R1(config-if)#exit
R1(config)#exit
R1#
*Nov 17 13:11:22.811: %SYS-5-CONFIG_I: Configured from console by console
R1#show ip interface brief
Interface          IP-Address      OK? Method Status      Prot
ocol
FastEthernet0/0      192.168.0.4    YES manual up        up
Ethernet1/0          192.168.1.7    YES manual administratively down down
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#
```

PC1 - PuTTY

```
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

PCL> ip 192.168.0.1 255.255.0.0
Checking for duplicate address...
PCL : 192.168.0.1 255.255.0.0

PCL> ping 192.168.1.5
host (192.168.1.5) not reachable

PCL> ping 192.168.0.3
84 bytes from 192.168.0.3 icmp_seq=1 ttl=64 time=1.376 ms
84 bytes from 192.168.0.3 icmp_seq=2 ttl=64 time=1.256 ms
84 bytes from 192.168.0.3 icmp_seq=3 ttl=64 time=0.800 ms
84 bytes from 192.168.0.3 icmp_seq=4 ttl=64 time=1.349 ms
84 bytes from 192.168.0.3 icmp_seq=5 ttl=64 time=0.793 ms

PCL>
```