

## Lab 2: Configuring interconnecting two PCs via an Ethernet switch

1. Extend the 3-node topology to 4 node configuration (3 PC's and 1 Ethernet switch)

The screenshot displays the GNS3 interface with a topology consisting of three nodes: PC1, PC2, and Switch1. PC1 and PC2 are connected to Switch1 via their e0 interfaces. The console window shows the following commands and output:

```
PC> ip 10.1.1.1 255.255.255.0
Bad command: "PC> ip 10.1.1.1 255.255.255.0". Use ? for help.

PC3> ip 10.1.1.2 255.255.255.0
Checking for duplicate address...
PC3: 10.1.1.2 255.255.255.0

PC1> ping 10.1.1.1
64 bytes from 10.1.1.1: icmp_seq=1 ttl=64 time=0.925 ms
64 bytes from 10.1.1.1: icmp_seq=2 ttl=64 time=0.886 ms
64 bytes from 10.1.1.1: icmp_seq=3 ttl=64 time=0.971 ms
64 bytes from 10.1.1.1: icmp_seq=4 ttl=64 time=0.834 ms
64 bytes from 10.1.1.1: icmp_seq=5 ttl=64 time=0.912 ms

PC2> ping 10.1.1.2
64 bytes from 10.1.1.2: icmp_seq=1 ttl=64 time=0.912 ms
64 bytes from 10.1.1.2: icmp_seq=2 ttl=64 time=0.916 ms
64 bytes from 10.1.1.2: icmp_seq=3 ttl=64 time=0.945 ms
64 bytes from 10.1.1.2: icmp_seq=4 ttl=64 time=0.924 ms
64 bytes from 10.1.1.2: icmp_seq=5 ttl=64 time=0.930 ms

PC3> save
Saving startup configuration to startup.vpc
Done

PC3>
```

The topology summary on the right shows the following configuration:

Node	Console
PC1	telnet localhost:5001
PC2	telnet localhost:5003
PC3	telnet localhost:5005
Switch1	none

1. Measure the delay between pairs of PC's

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Homework 3

```
ip 10.1.1.1 255.255.255.0
Checking for duplicate address...
PC1 : 10.1.1.1 255.255.255.0

PC1> ping 10.1.1.2
04 bytes from 10.1.1.2 icmp_seq=1 ttl=64 time=0.890 ms
04 bytes from 10.1.1.2 icmp_seq=2 ttl=64 time=0.820 ms
04 bytes from 10.1.1.2 icmp_seq=3 ttl=64 time=0.835 ms
04 bytes from 10.1.1.2 icmp_seq=4 ttl=64 time=0.693 ms
04 bytes from 10.1.1.2 icmp_seq=5 ttl=64 time=0.664 ms

PC1> ping 10.1.1.3
04 bytes from 10.1.1.3 icmp_seq=1 ttl=64 time=0.764 ms
04 bytes from 10.1.1.3 icmp_seq=2 ttl=64 time=0.957 ms
04 bytes from 10.1.1.3 icmp_seq=3 ttl=64 time=0.861 ms
04 bytes from 10.1.1.3 icmp_seq=4 ttl=64 time=0.862 ms
04 bytes from 10.1.1.3 icmp_seq=5 ttl=64 time=0.848 ms

PC1> save
Saving startup configuration to startup.vpc
done

PC1>
```

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```
ip 10.1.1.1 255.255.255.0
Checking for duplicate address...
PC1 : 10.1.1.1 255.255.255.0

PC2> ping 10.1.1.1
04 bytes from 10.1.1.1 icmp_seq=1 ttl=64 time=0.676 ms
04 bytes from 10.1.1.1 icmp_seq=2 ttl=64 time=0.677 ms
04 bytes from 10.1.1.1 icmp_seq=3 ttl=64 time=0.183 ms
04 bytes from 10.1.1.1 icmp_seq=4 ttl=64 time=0.667 ms
04 bytes from 10.1.1.1 icmp_seq=5 ttl=64 time=0.626 ms

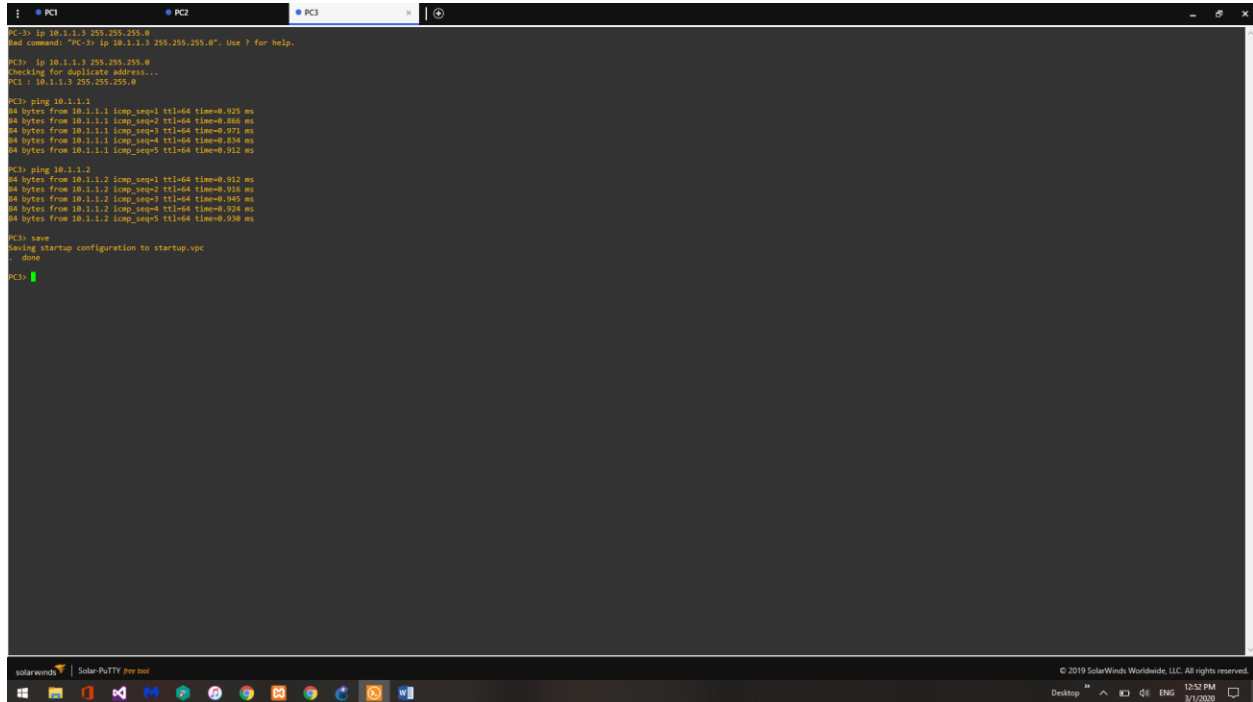
PC2> ping 10.1.1.3
04 bytes from 10.1.1.3 icmp_seq=1 ttl=64 time=0.580 ms
04 bytes from 10.1.1.3 icmp_seq=2 ttl=64 time=0.925 ms
04 bytes from 10.1.1.3 icmp_seq=3 ttl=64 time=0.945 ms
04 bytes from 10.1.1.3 icmp_seq=4 ttl=64 time=0.820 ms
04 bytes from 10.1.1.3 icmp_seq=5 ttl=64 time=0.823 ms

PC2> save
Saving startup configuration to startup.vpc
done

PC2>
```

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```
PC1> ip 10.1.1.1 255.255.255.0
Bad command: "PC1> ip 10.1.1.1 255.255.255.0". Use ? for help.

PC2> ip 10.1.1.2 255.255.255.0
Checking for duplicate address...
PC1 : 10.1.1.1 255.255.255.0

PC2> ping 10.1.1.1
04 bytes from 10.1.1.1 icmp_seq=1 ttl=64 time=0.925 ms
04 bytes from 10.1.1.2 icmp_seq=2 ttl=64 time=0.866 ms
04 bytes from 10.1.1.1 icmp_seq=3 ttl=64 time=0.971 ms
04 bytes from 10.1.1.1 icmp_seq=4 ttl=64 time=0.834 ms
04 bytes from 10.1.1.1 icmp_seq=5 ttl=64 time=0.512 ms

PC2> ping 10.1.1.2
04 bytes from 10.1.1.2 icmp_seq=1 ttl=64 time=0.912 ms
04 bytes from 10.1.1.2 icmp_seq=2 ttl=64 time=0.916 ms
04 bytes from 10.1.1.2 icmp_seq=3 ttl=64 time=0.945 ms
04 bytes from 10.1.1.2 icmp_seq=4 ttl=64 time=0.924 ms
04 bytes from 10.1.1.2 icmp_seq=5 ttl=64 time=0.938 ms

PC2> save
Saving startup configuration to startup.vpc
done

PC2>
```

- a. Are the delays identical? if yes how? if no why?

The delays are close but not entirely identical due to the differences in the network usage.

- b. Are the delays symmetric? if yes how? if no why?

Once again the delays aren't quite symmetrical but they are close, assumedly due to variations in network usage over time.