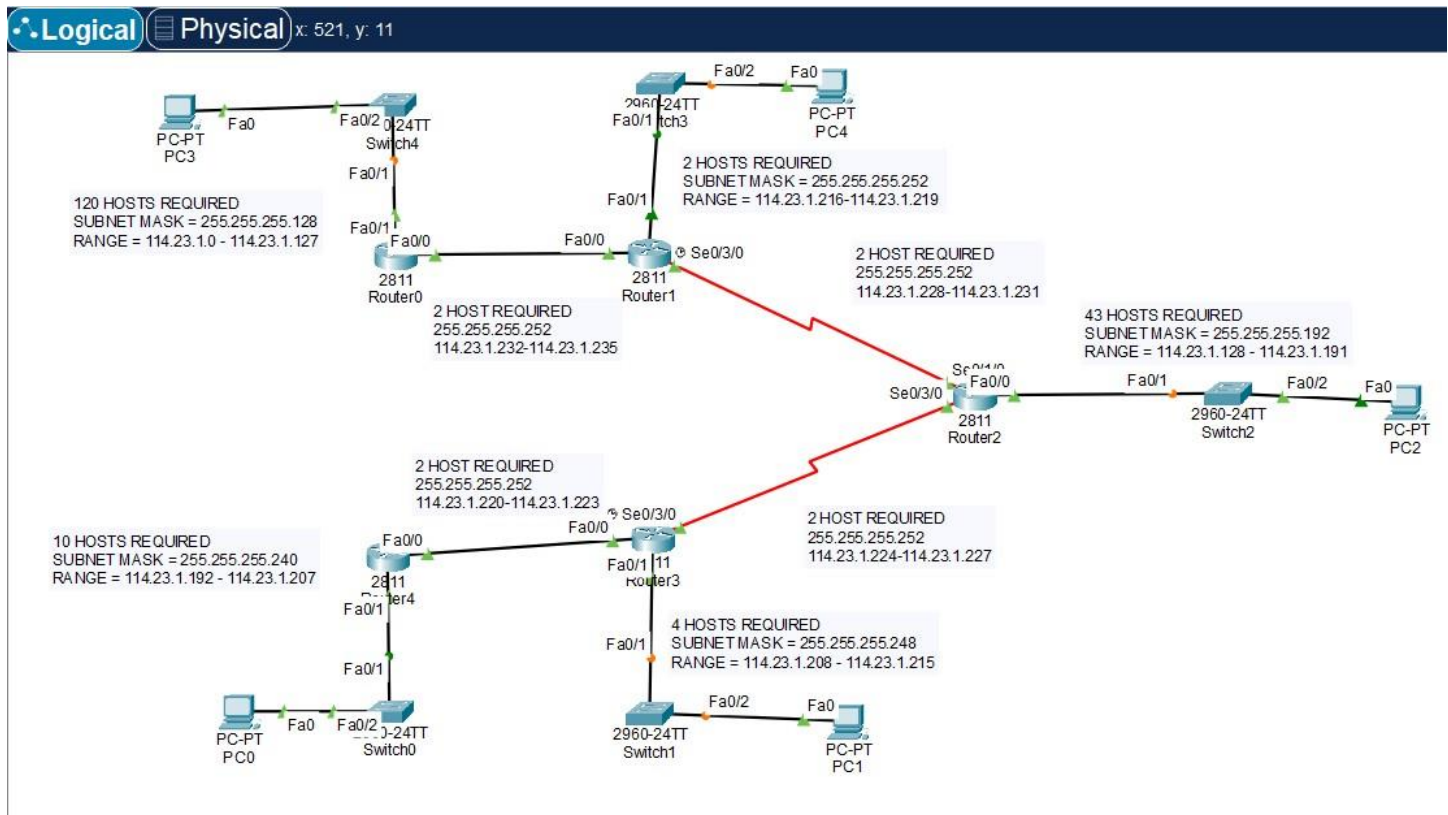


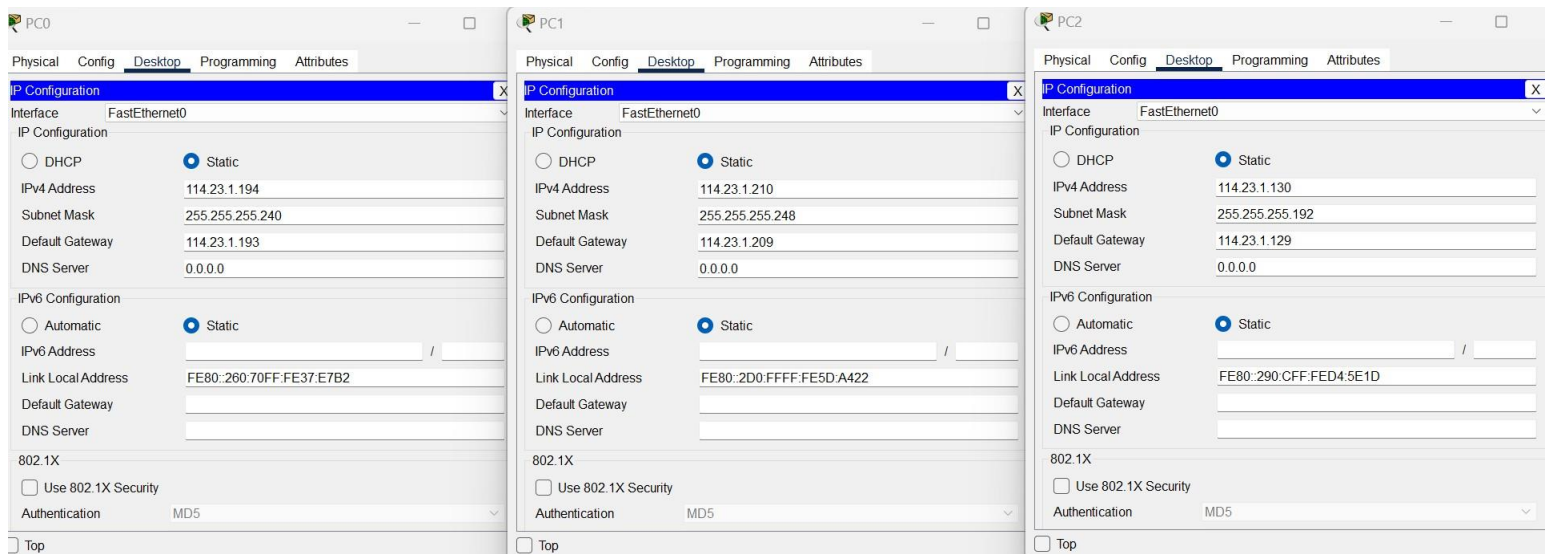
TASK 5

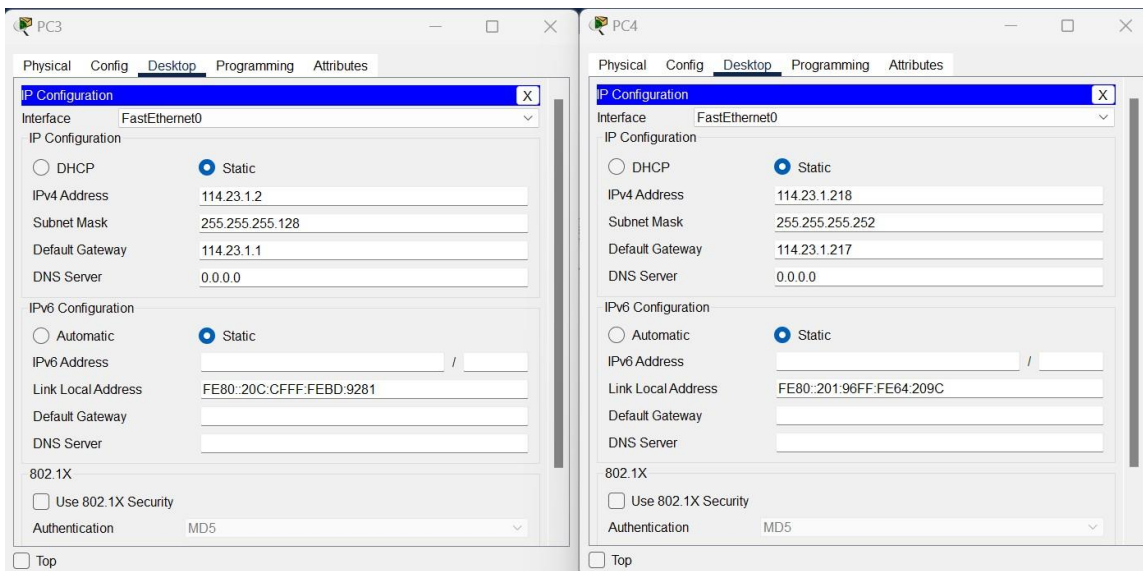
Submitted by: YOUAIL JOHN (EL-19038)

Designing the Topology: The topology was designed according to the given diagram but the number of hosts were reduced for simplicity.



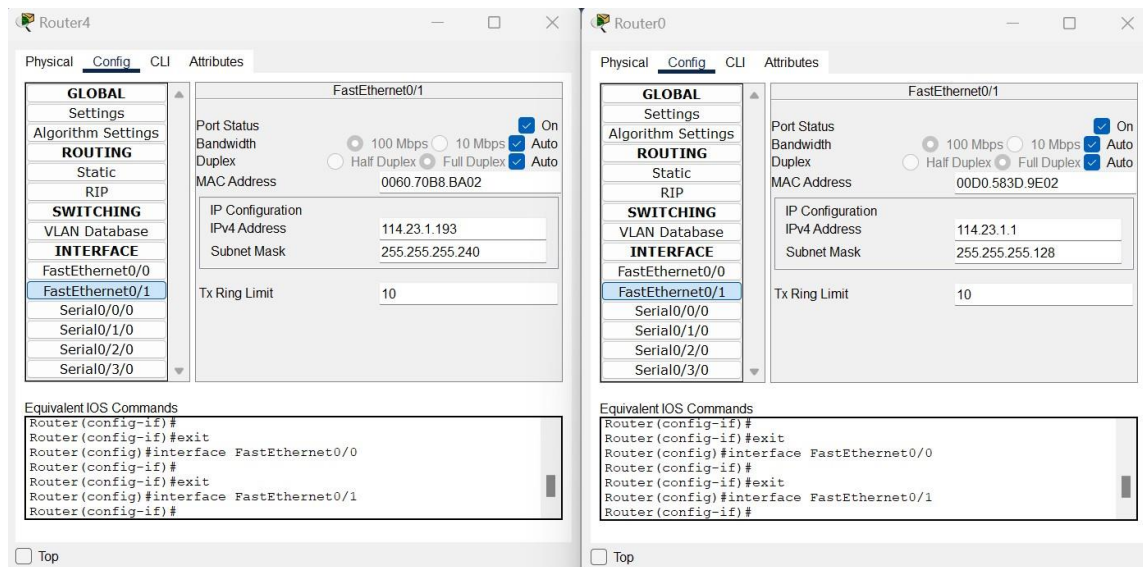
Setting up PCs: IPv4 addresses and default gateways are assigned according to the valid hosts addresses taken from the table. Subnet Mask is 255.255.0.0



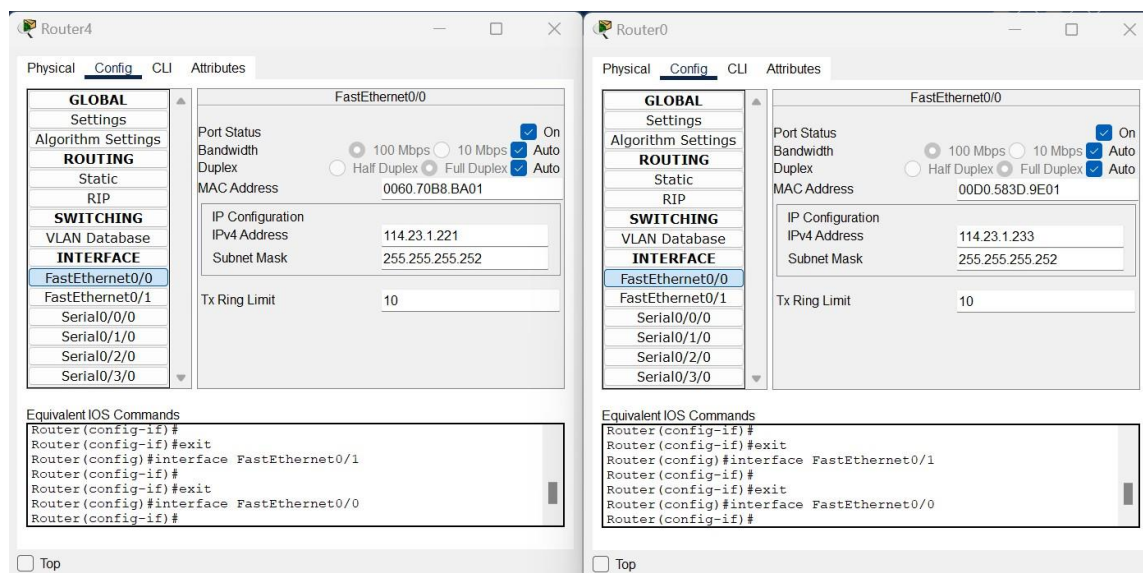


Setting up Routers: Connecting the switches to router and setting up all the routers.

Firstly, the Router 0 and Router 4 are connected to PC.



Secondly, the setup of the FastEthernet connection of Router0 with Router1 and Router4 with Router3.



Lastly setting up static routing so routers can communicate with each other
Configuring Static routing so routers can communicate via serial port.

The image shows two side-by-side configuration windows for Router4 and Router0. Both windows are in the 'Config' tab, showing the 'ROUTING' section with 'Static' selected. The 'Static Routes' table is populated with the following entries:

Network Address	Next Hop
114.23.1.224/30	114.23.1.222
114.23.1.208/29	114.23.1.222

The 'Equivalent IOS Commands' section for both routers contains the following commands:

```
Router(config)#ip route 114.23.1.228 255.255.255.248 114.23.1.222
Router(config)#
Router(config)#
Router(config)#
Router(config)#
```

Now we setup Router1 and Router3
Firstly, setting up the PC connection with routers.

The image shows two side-by-side configuration windows for Router3 and Router1. Both windows are in the 'Config' tab, showing the 'INTERFACE' section with 'FastEthernet0/0' selected. The 'FastEthernet0/0' configuration is as follows:

Property	Value
Port Status	On
Bandwidth	100 Mbps
Duplex	Full Duplex
MAC Address	0060.2FD2.7501 (Router3) / 000D.BD00.9901 (Router1)
IP Configuration	IPv4 Address: 114.23.1.222 (Router3) / 114.23.1.234 (Router1)
Subnet Mask	255.255.255.252
Tx Ring Limit	10

The 'Equivalent IOS Commands' section for both routers contains the following commands:

```
Router>enable
Router#
Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Router(config)#interface FastEthernet0/0
Router(config-if)#
```

Then setting up the connections with Router0 and Router4 with Router1 and Router3 respectively.

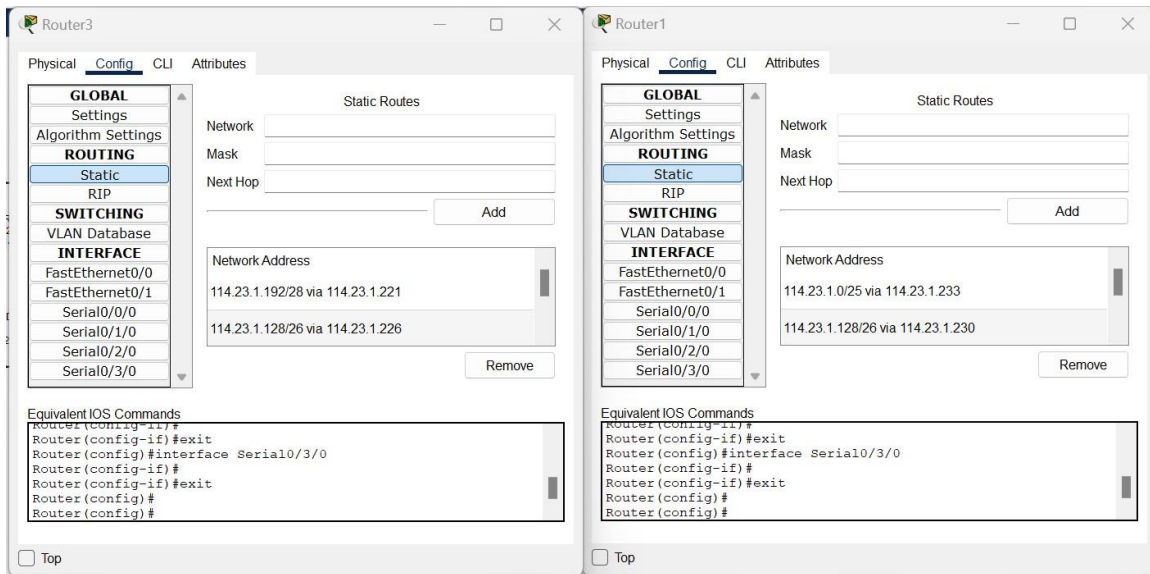
The image shows two side-by-side configuration windows for Router3 and Router1. Both windows are in the 'Config' tab, showing the 'INTERFACE' section with 'Serial0/3/0' selected. The 'Serial0/3/0' configuration is as follows:

Property	Value
Port Status	On
Duplex	Full Duplex
Clock Rate	2000000
IP Configuration	IPv4 Address: 114.23.1.225 (Router3) / 114.23.1.229 (Router1)
Subnet Mask	255.255.255.252
Tx Ring Limit	10

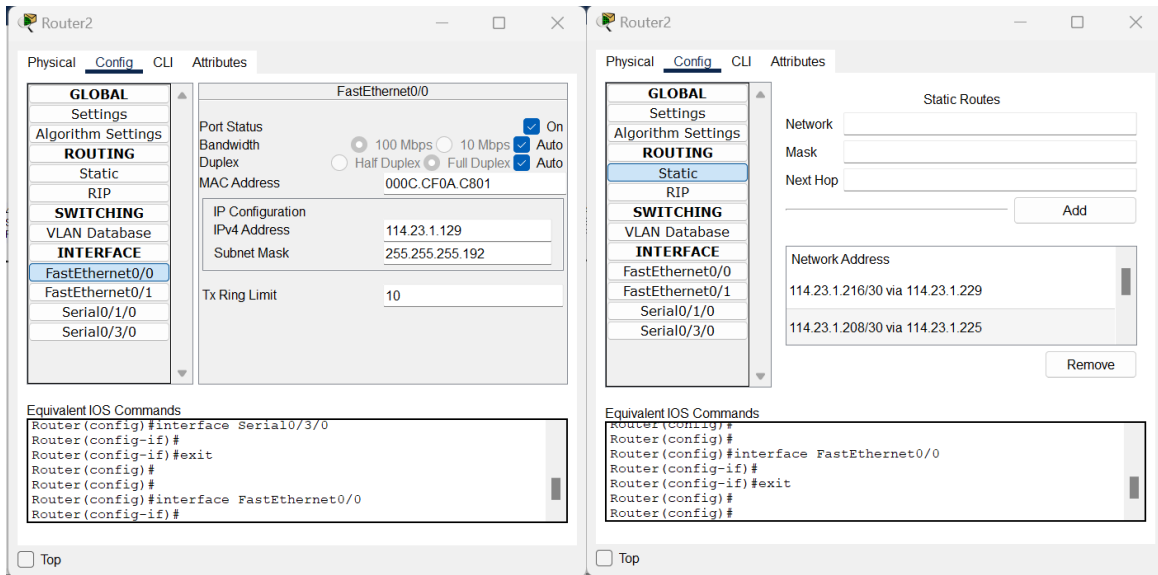
The 'Equivalent IOS Commands' section for both routers contains the following commands:

```
Router(config-if)#
Router(config-if)#exit
Router(config)#interface Serial0/1/0
Router(config-if)#
Router(config-if)#exit
Router(config)#interface Serial0/3/0
Router(config-if)#
```

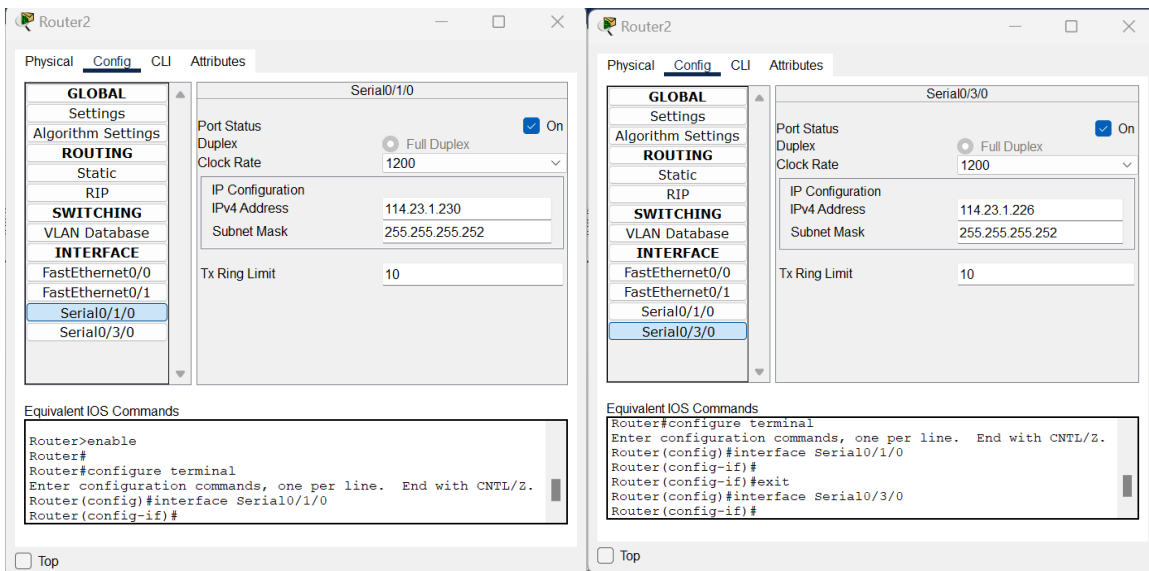
Static routing the routers



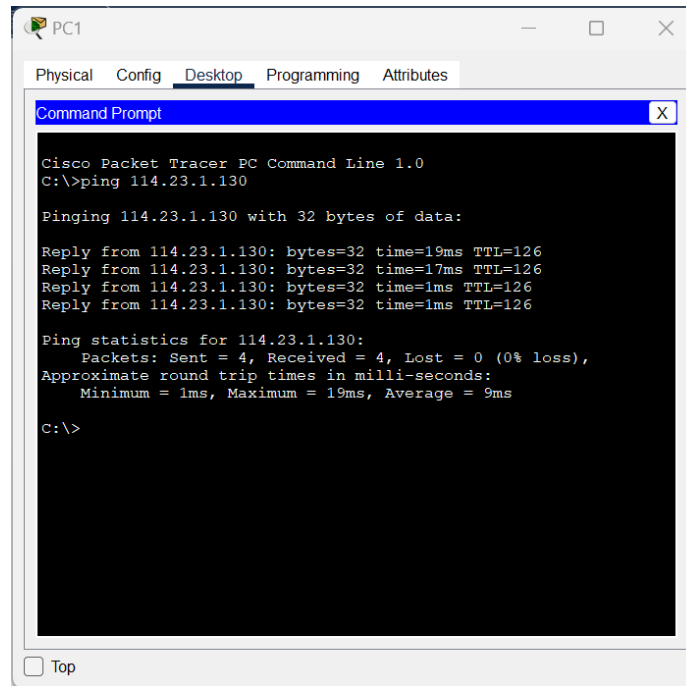
FastEtherent connection to PCs for Router2and static routing Router2



Serial connection of Router2 to Router1 and Router3



Pinging: Verifying connections by pinging PC1 (IPv4= 114.23.1.210) to PC13 (IPv4= 114.23.1.130) which is successful.



```
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 114.23.1.130









Pinging 114.23.1.130 with 32 bytes of data:

Reply from 114.23.1.130: bytes=32 time=19ms TTL=126
Reply from 114.23.1.130: bytes=32 time=17ms TTL=126
Reply from 114.23.1.130: bytes=32 time=1ms TTL=126
Reply from 114.23.1.130: bytes=32 time=1ms TTL=126

Ping statistics for 114.23.1.130:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 1ms, Maximum = 19ms, Average = 9ms

C:\>
```

More tests with successful packet transfers

Fire	Last Status	Source	Destination	Type	Color	Time(sec)	Periodic	Num	Edit	Delete
	Successful	PC3	PC4	ICMP		0.000	N	0	(edit)	(delete)
	Successful	PC0	PC1	ICMP		0.000	N	1	(edit)	(delete)
	Successful	PC2	PC1	ICMP		0.000	N	2	(edit)	(delete)
	Successful	PC4	PC2	ICMP		0.000	N	3	(edit)	(delete)