Networking Academy

Packet Tracer - Troubleshooting Challenge - Use Documentationto Solve Issues

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Addressing Table

Device	Interface	Device Type (router, switch, host)	IP Address	Subnet Mask	Default Gateway
PC1					
PC2	NIC	host	192.168.3.50	255.255.255.0	192.168.3.1
PC3	NIC	host	192.168.4.115	255.255.255.0	192.168.4.1
PC4	NIC	host	192.168.5.83	255.255.255.128	192.168.5.1
PC5	NIC	host	192.168.5.227	255.255.255.128	192.168.5.129
PC6	NIC	host	192.168.2.48	255.255.255.224	192.168.2.33
PC7	NIC	host	192.168.2.67	255.255.255.224	192.168.2.65
Hub	G0/0/0	Router	192.0.2.1	255.255.255.252	
	S0/1/0	Router	192.168.0.1	255.255.255.252	
	/1/1	Router	192.168.0.5	255.255.255.252	
	S0/2/0	Router	192.168.0.9	255.255.255.252	
	S0/2/1	Router	192.168.0.13	255.255.255.252	
Branch-1	G0/0/0	Router	192.168.1.1	255.255.255.0	
	S0/1/0	Router	192.168.0.2	255.255.255.252	
Branch-2	G0/0/0	Router	192.168.2.33	255.255.255.224	
	S0/1/0	Router	192.168.0.6	255.255.255.252	
Factory	G0/0/0	Router	192.168.3.1	255.255.255.0	
	G0/0/1	Router	192.168.4.1	255.255.255.0	
	S0/1/0	Router	192.168.0.14	255.255.255.252	
HQ	G0/0/0.1	Router	192.168.6.1	255.255.255.0	
	G0/0/0.5	Router	192.168.5.1	255.255.255.128	
	G0/0/0.10	Router	192.168.5.128	255.255.255.128	
	S0/1/0	Router	192.168.0.10	255.255.255.252	

Objectives

In this lab, you use network documentation to identify and fix network communications problems.

- Use various techniques and tools to identify connectivity issues.
- Use documentation to guide troubleshooting efforts.
- Identify specific network problems.
- Implement solutions to network communication problems.
- Verify network operation.

Background / Scenario

In this activity, you will use the documentation that you created in the **Packet Tracer - Troubleshooting Challenge - Document the Network** activity to guide network troubleshooting efforts.

It has been discovered that the network that you worked with in the previous PT activity has developed communication problems. Some hosts are unable to ping other hosts and the internet server. It is your job to determine what the issues are and to locate and repair them.

Network issues could exist in any device. Be sure to check for comprehensive errors:

- Addressing configuration
- Interface activation
- Routing
- NAT

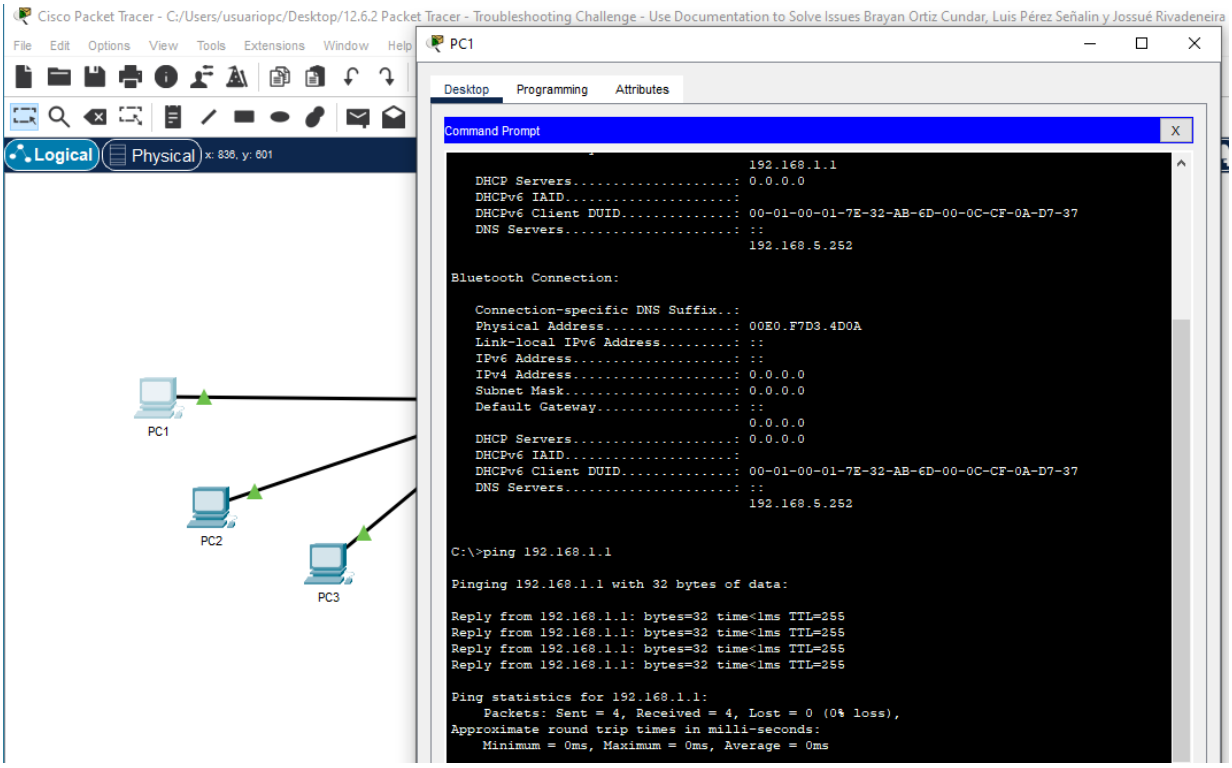
Instructions

Passwords for all devices are VTY: **cisco**, Enable secret: **class**

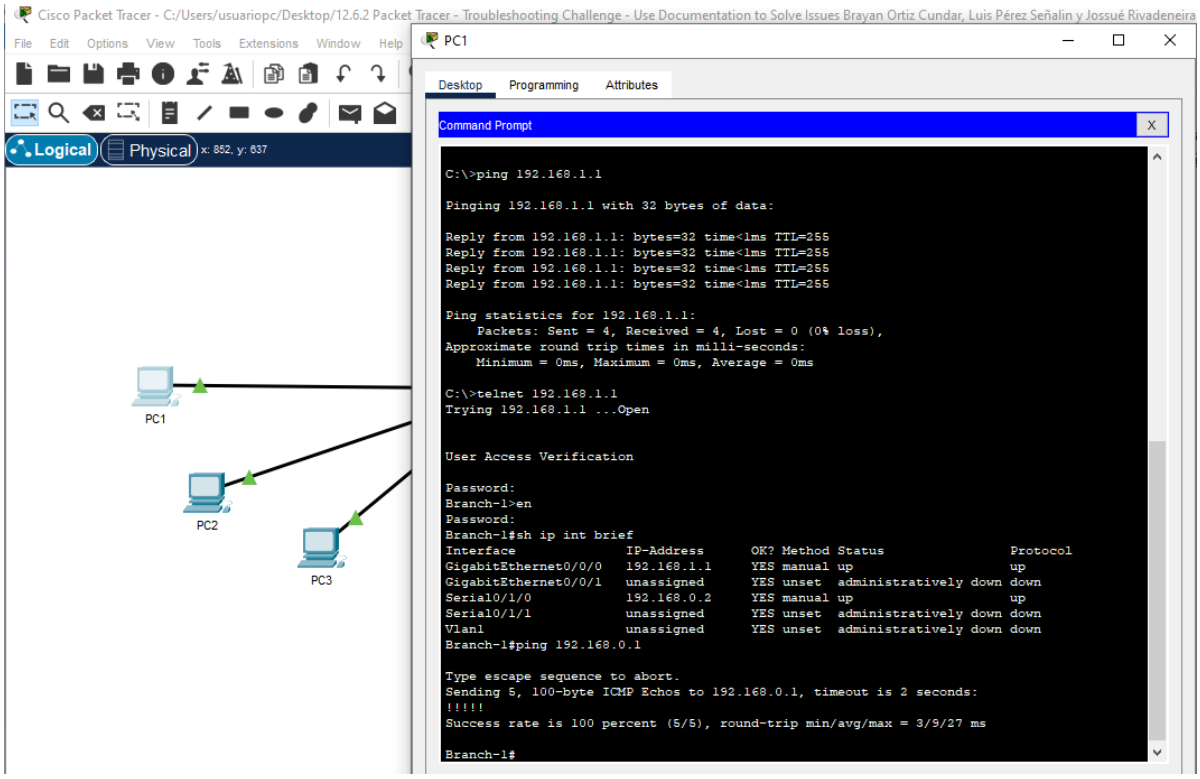
Part 1: Assess Connectivity

All hosts should be able to ping each other and the internet server. Determine if this requirement is met. If not, identify which hosts and networks should be further investigated.

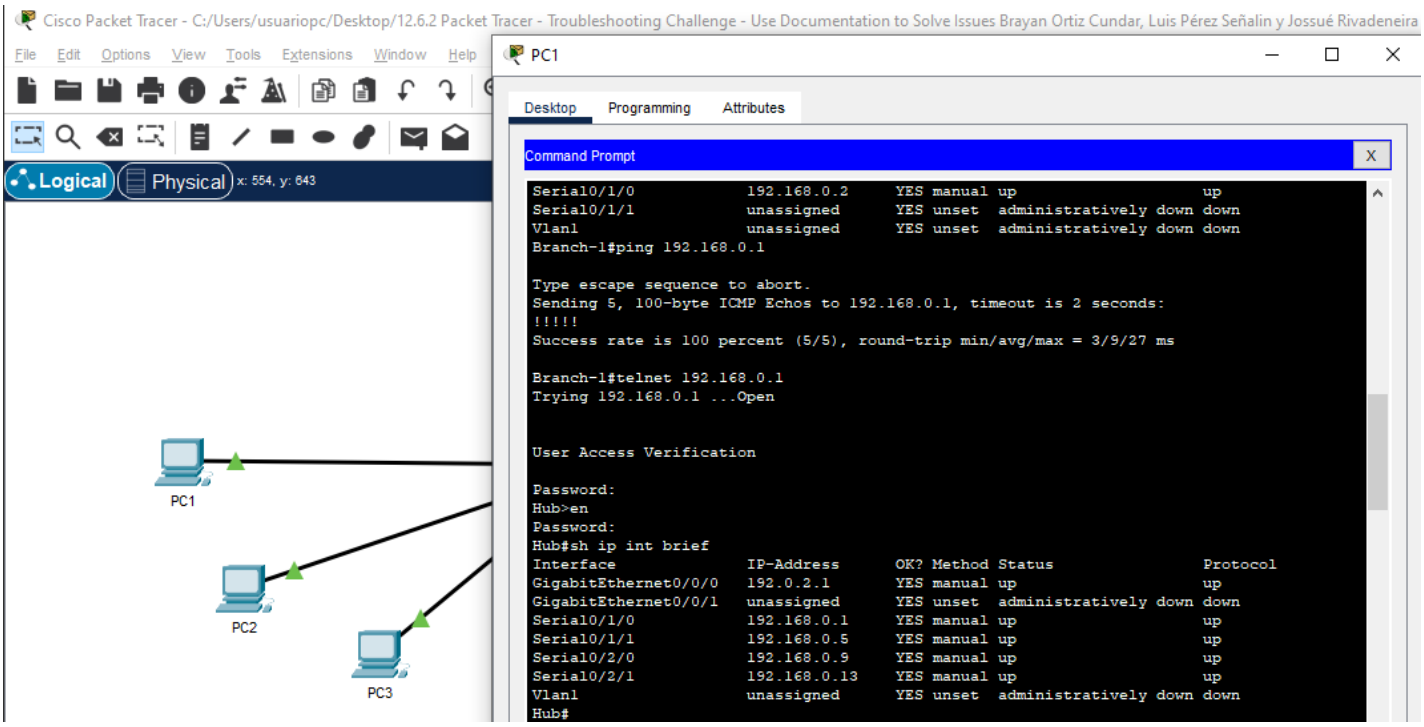
Ping de PC1 a su default Gateway:



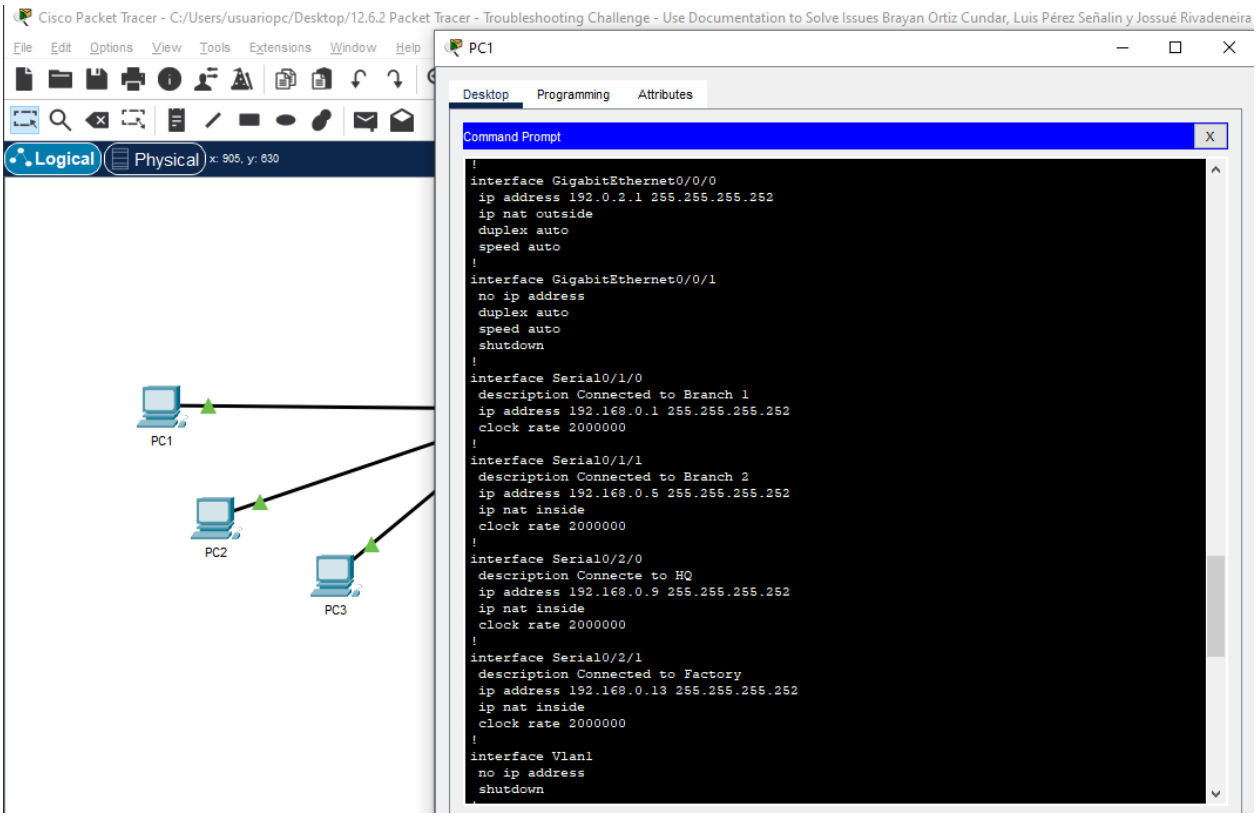
Ping desde Branch-1 a 192.168.0.1:



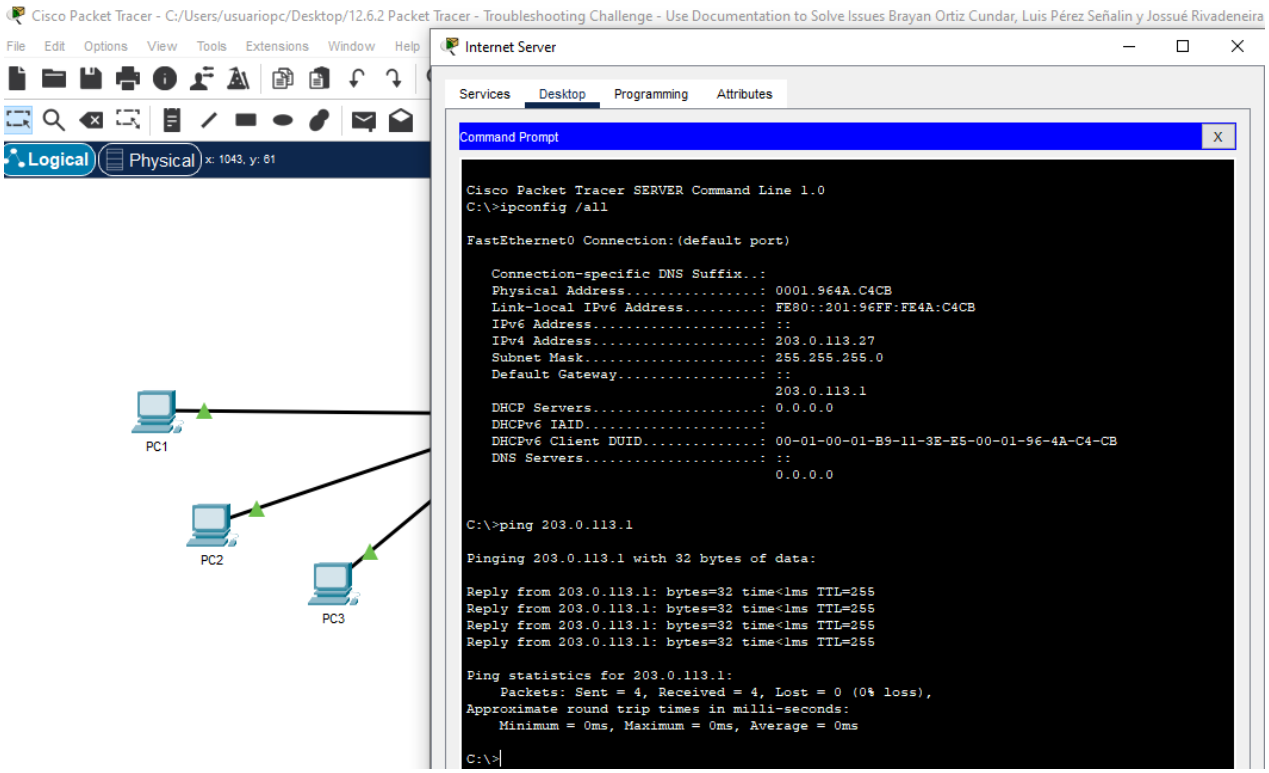
Sabemos que en el serial de Branch-1 hay la dirección 192.168.0.2 por lo que debería haber otra dirección con 0.1:



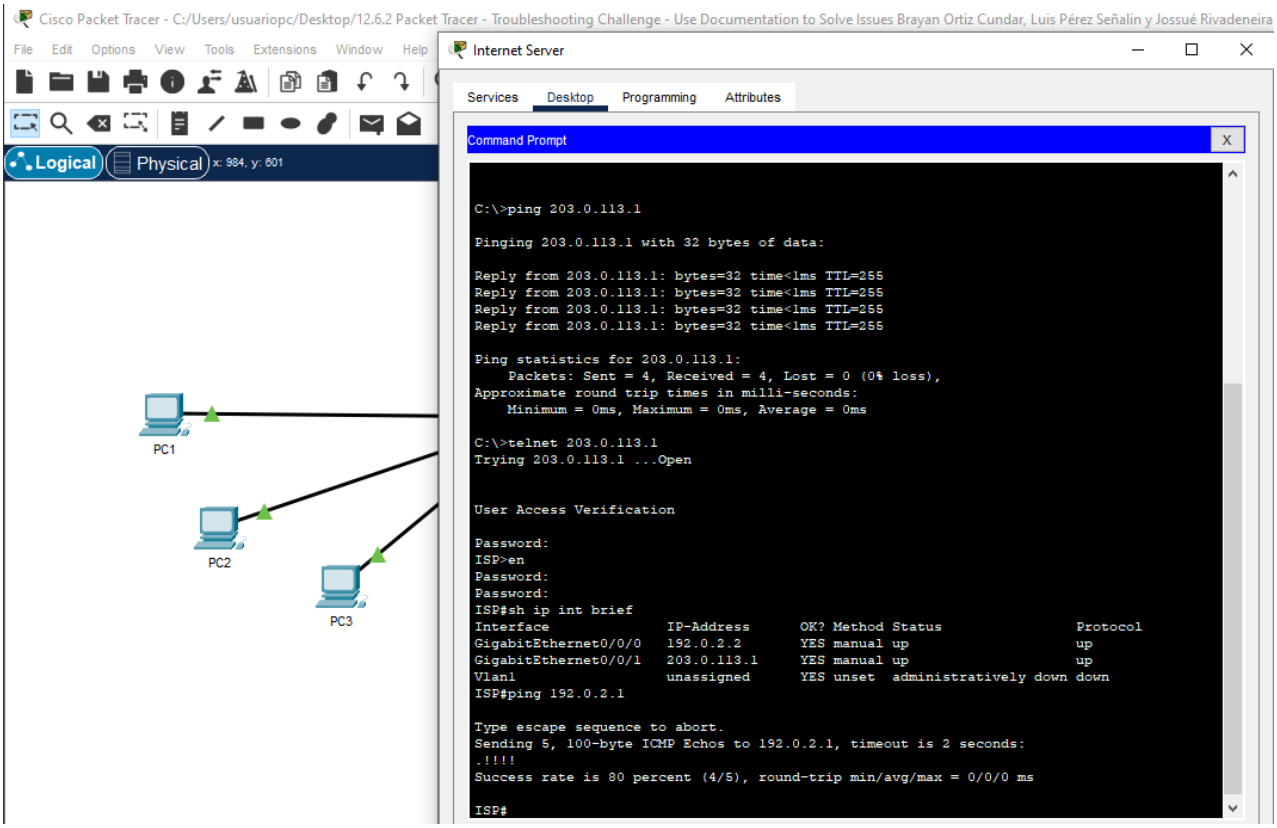
Ahora que conocemos varias de las direcciones que se encuentran en el hub, se usará el comando “sh running-config” para determinar más sobre las redes que contiene el Hub:



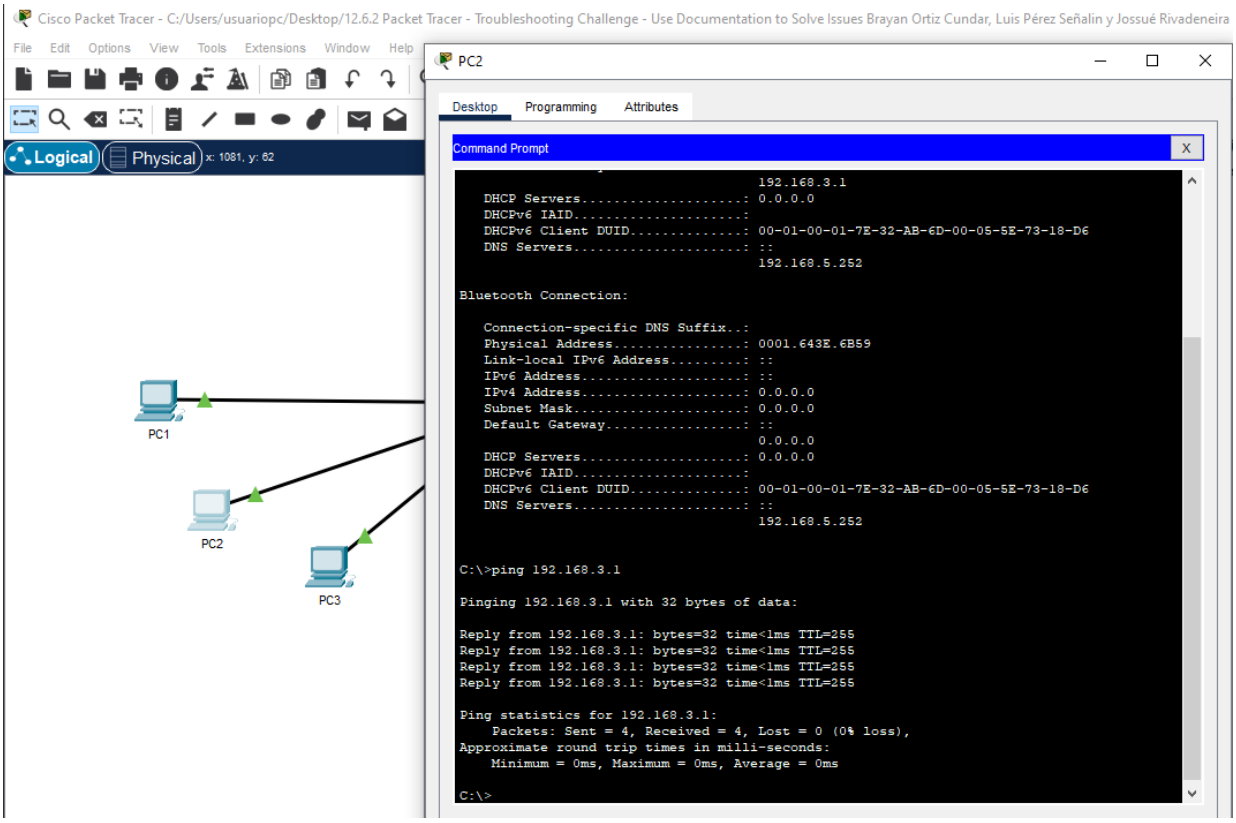
Ping desde Internet Server hasta su default gateway:



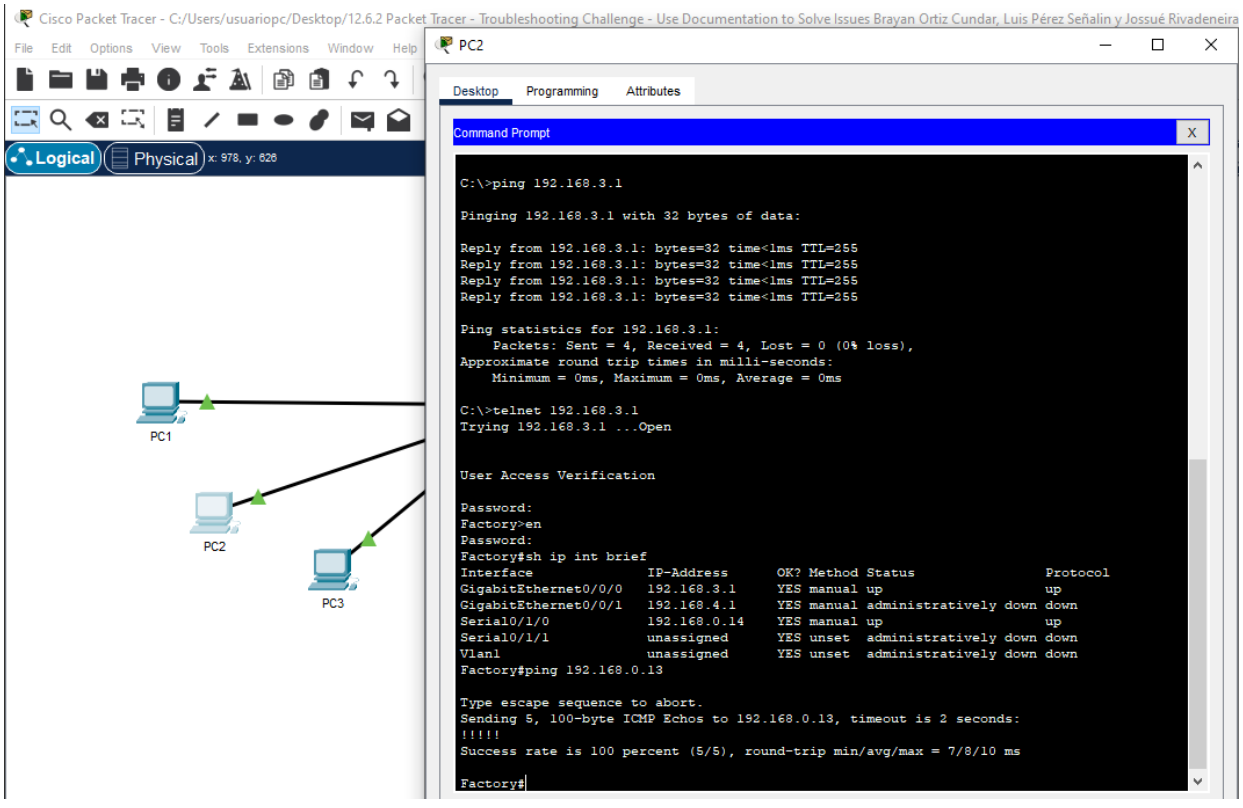
Ping desde el ISP hasta el HUB:



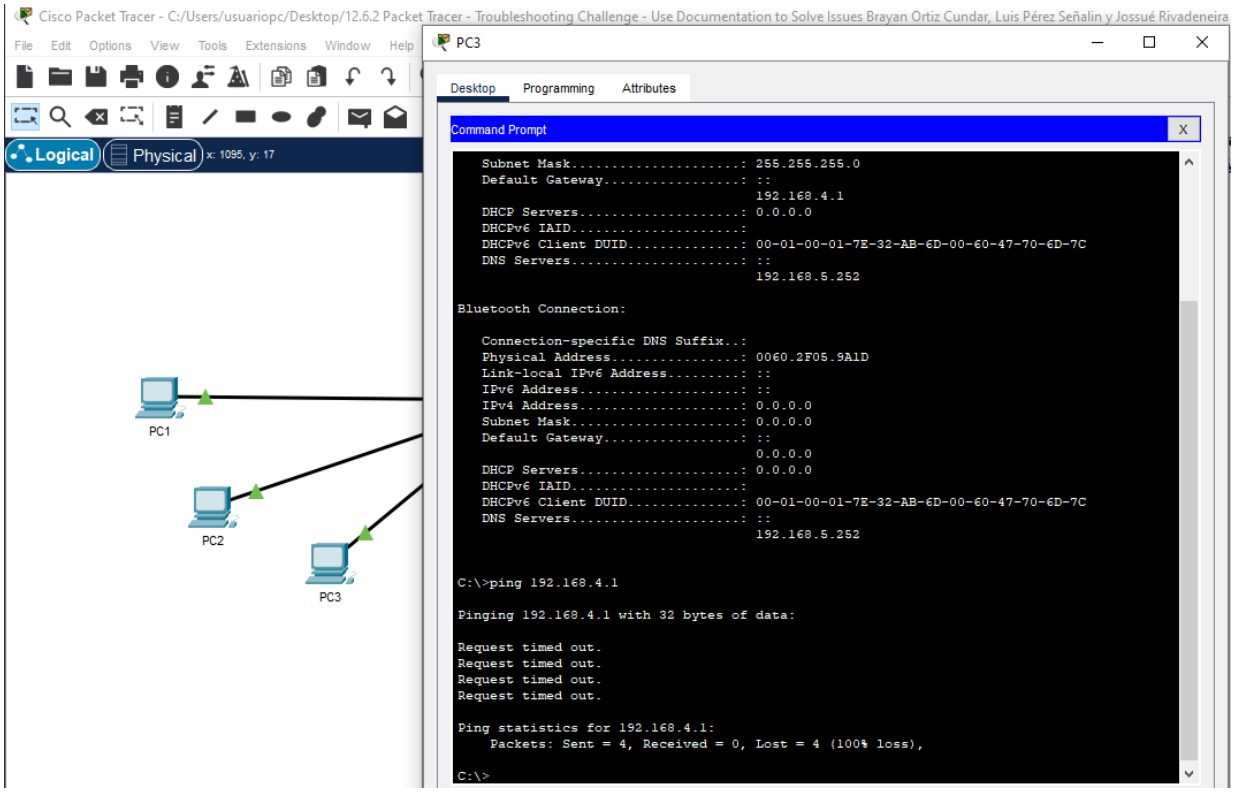
Ping desde PC2 a su default gateway:



Ping desde Factory al Hub:

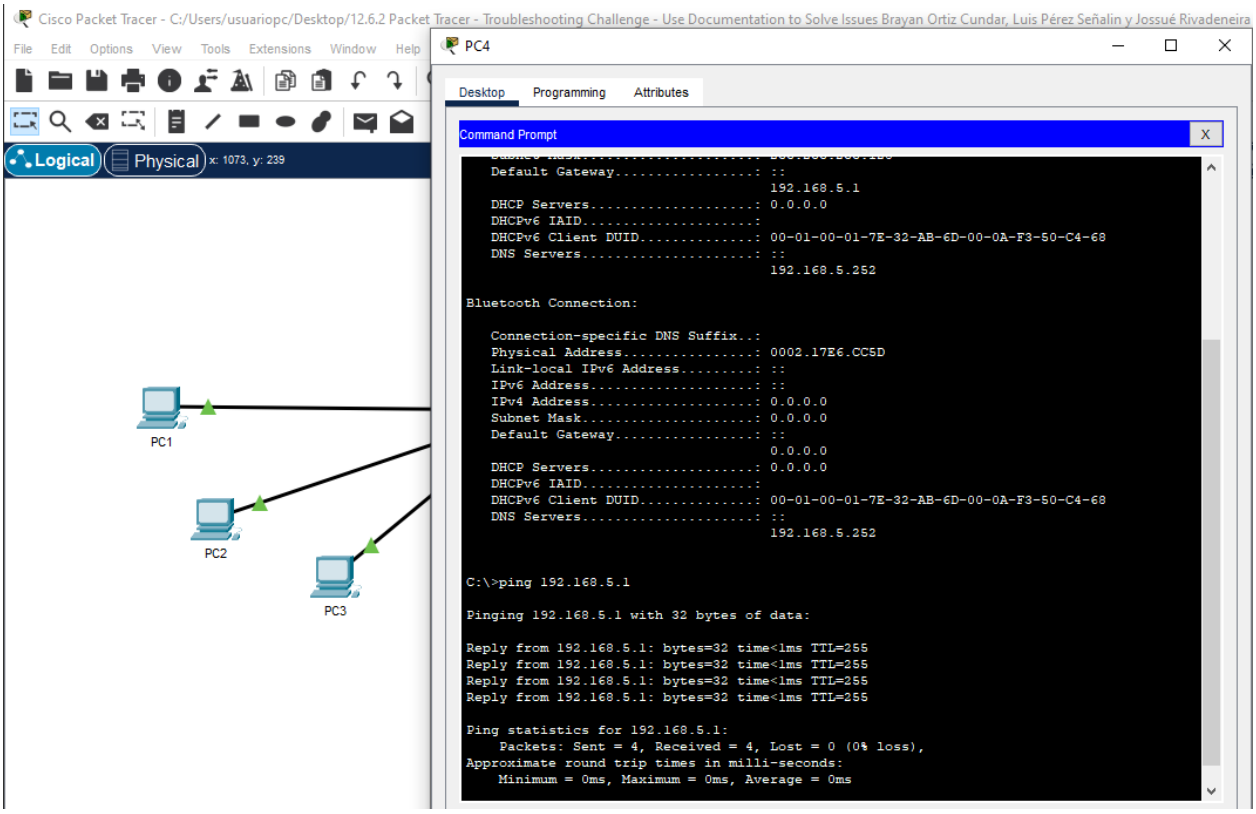


Ping desde PC3 a su default Gateway:

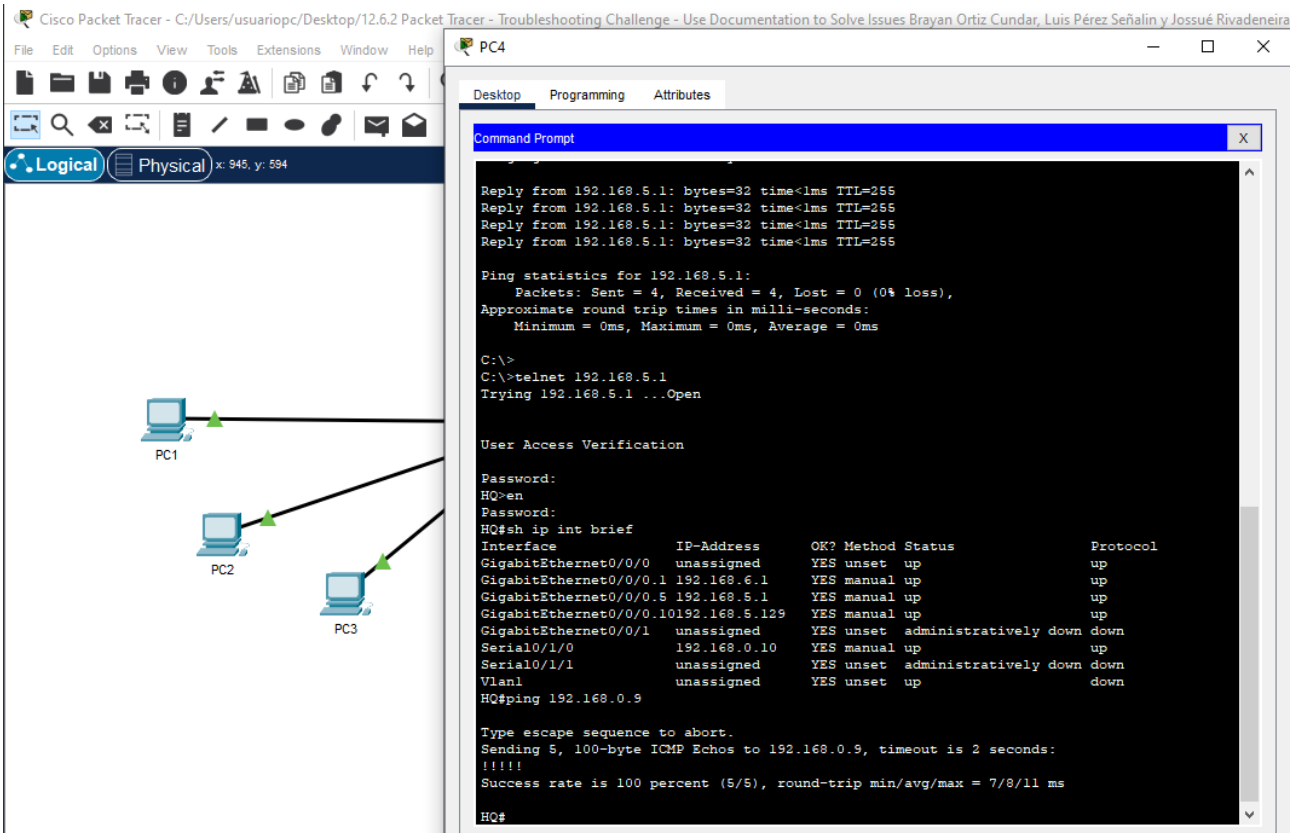


Aquí se encuentra un error que se corregirá más adelante

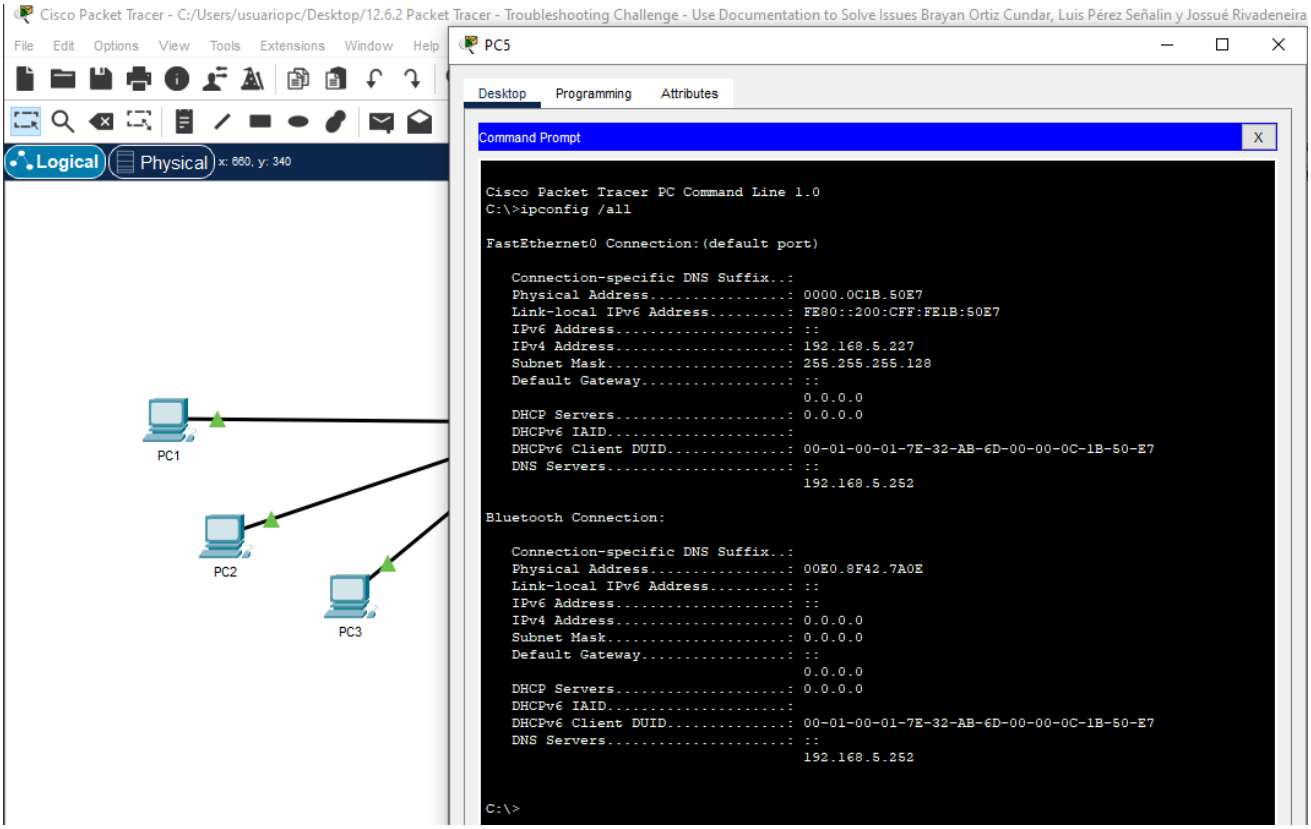
Ping desde PC4 hasta su default Gateway:



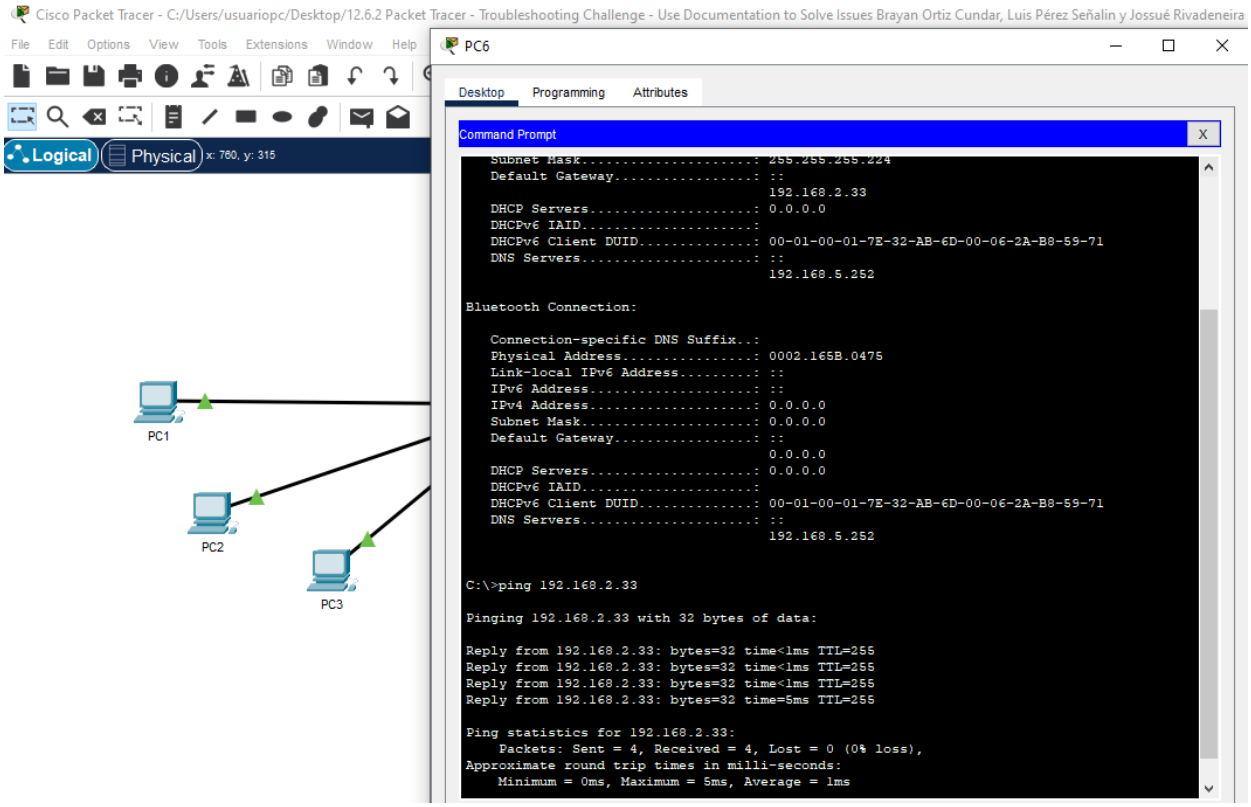
Ping desde HQ hasta el Hub:



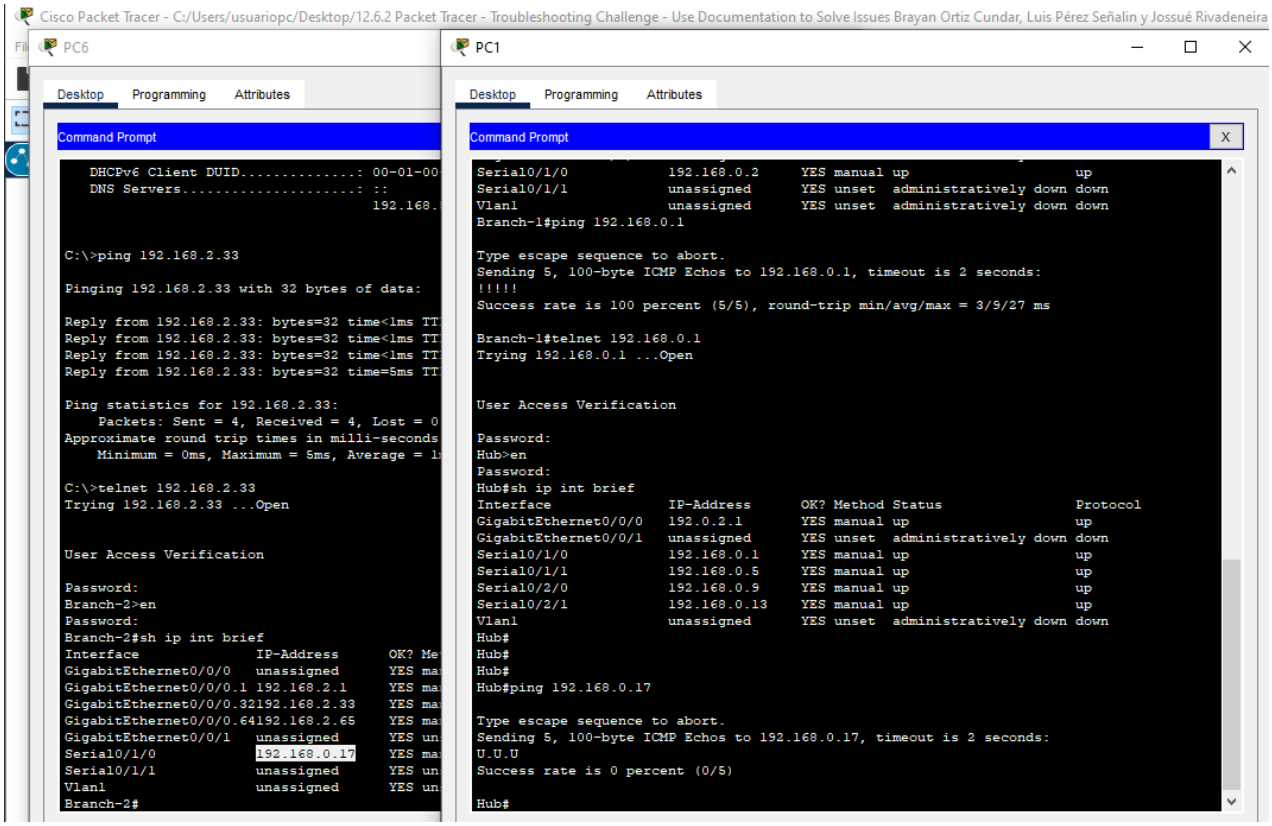
Aquí también vemos que PC5 no tiene un default Gateway:



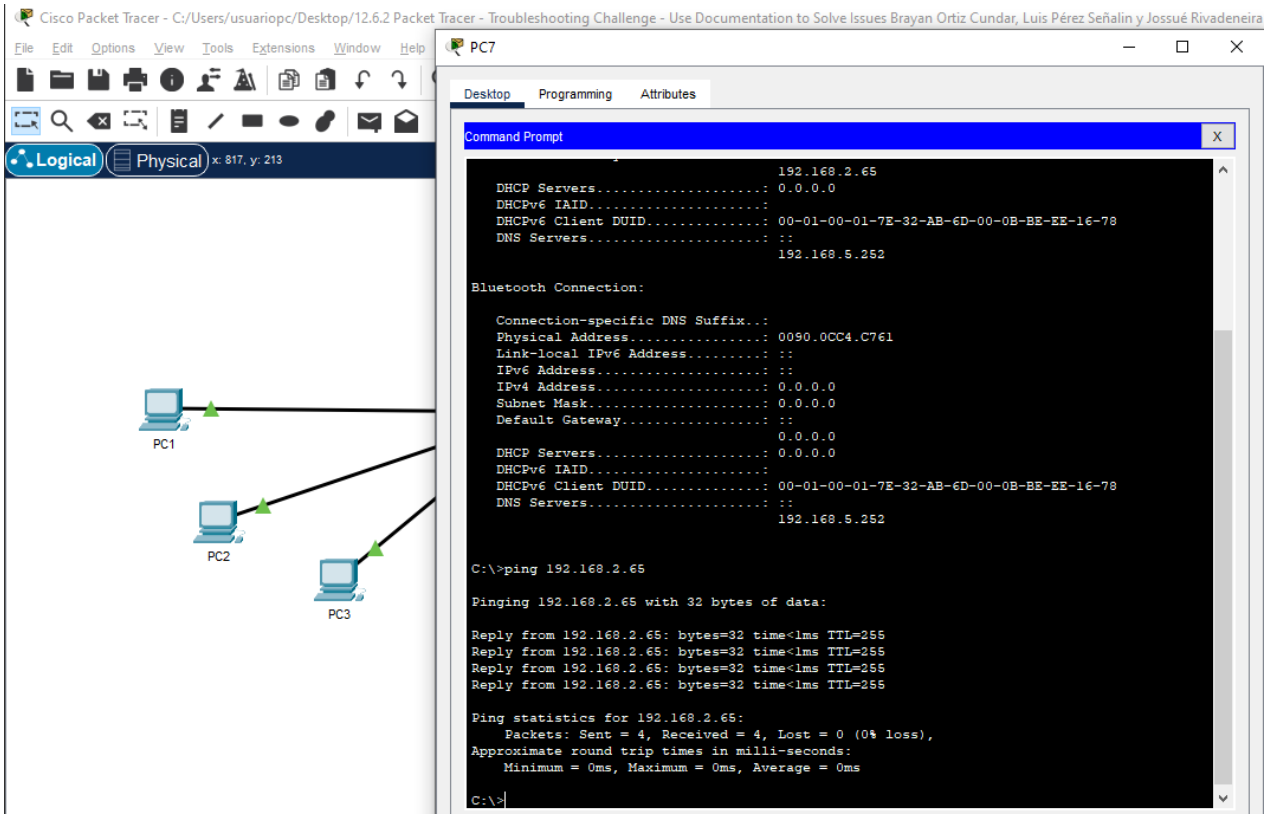
Ping desde PC6 hasta su default Gateway:



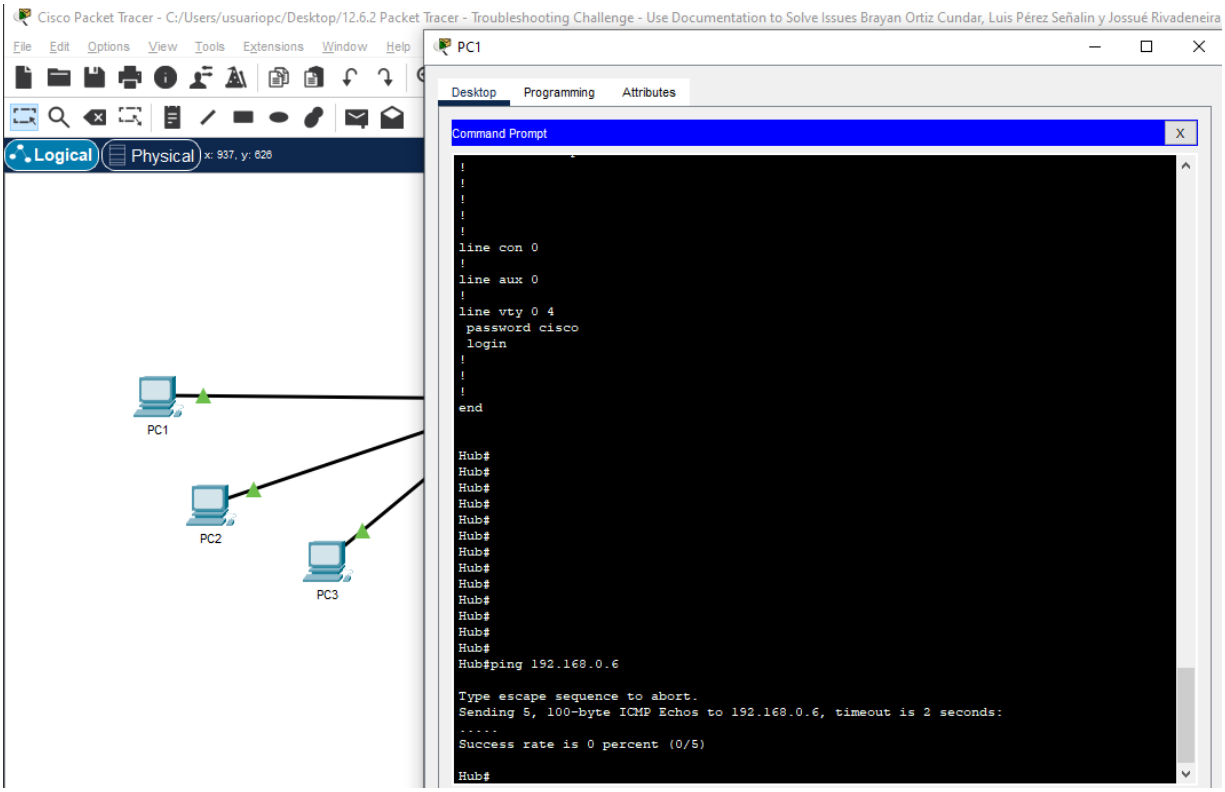
Se intentó realizar un ping desde Hub hasta Branch-2 pero al parecer no están conectados entre ellos:



Ping desde PC7 a su default Gateway:



Como el Hub es donde se une tanto Branch-1 como la mayoría de routers, vamos a ir viendo qué nomás se conecta hasta allí:

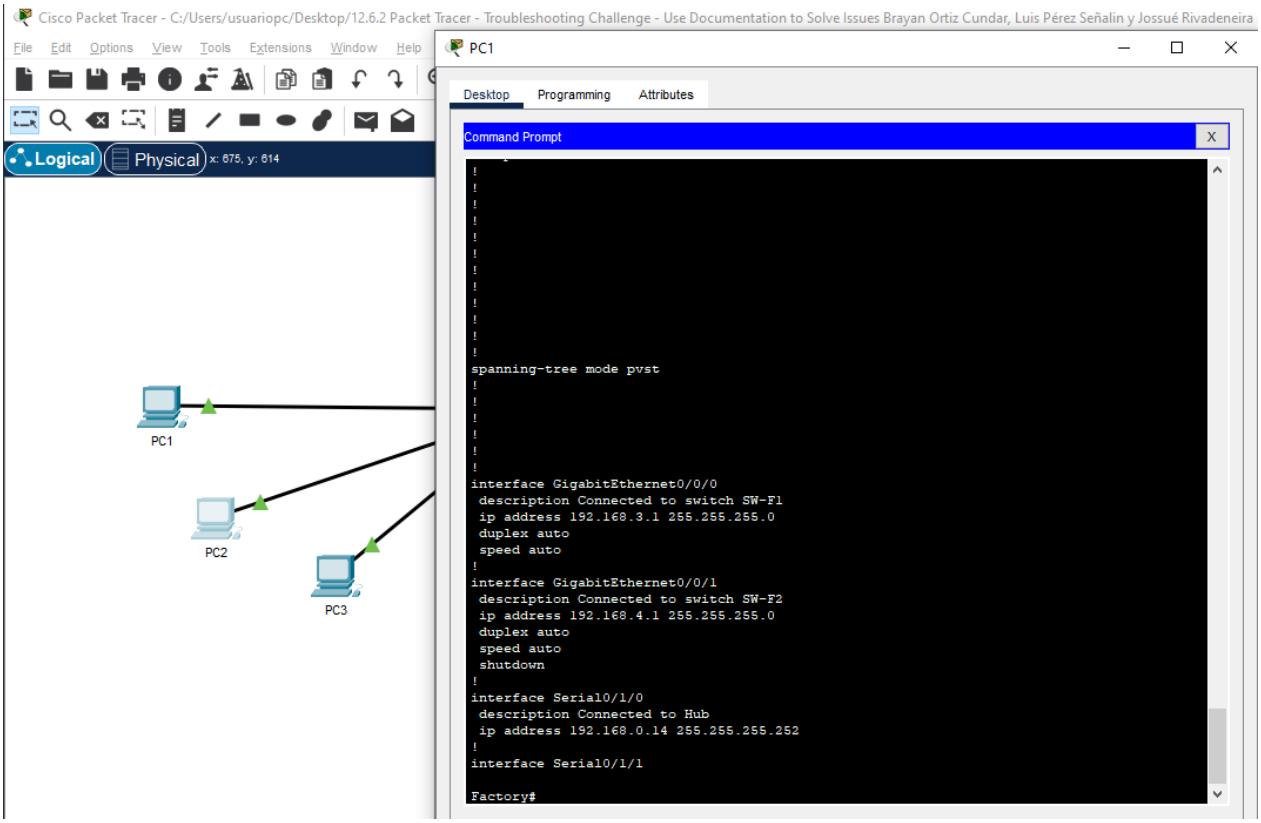


Al parecer aquí hay un problema de conexión del Hub a Branch-2, lo cual podría explicar el problema de PC6 y PC7.

Part 2: Access Network Devices

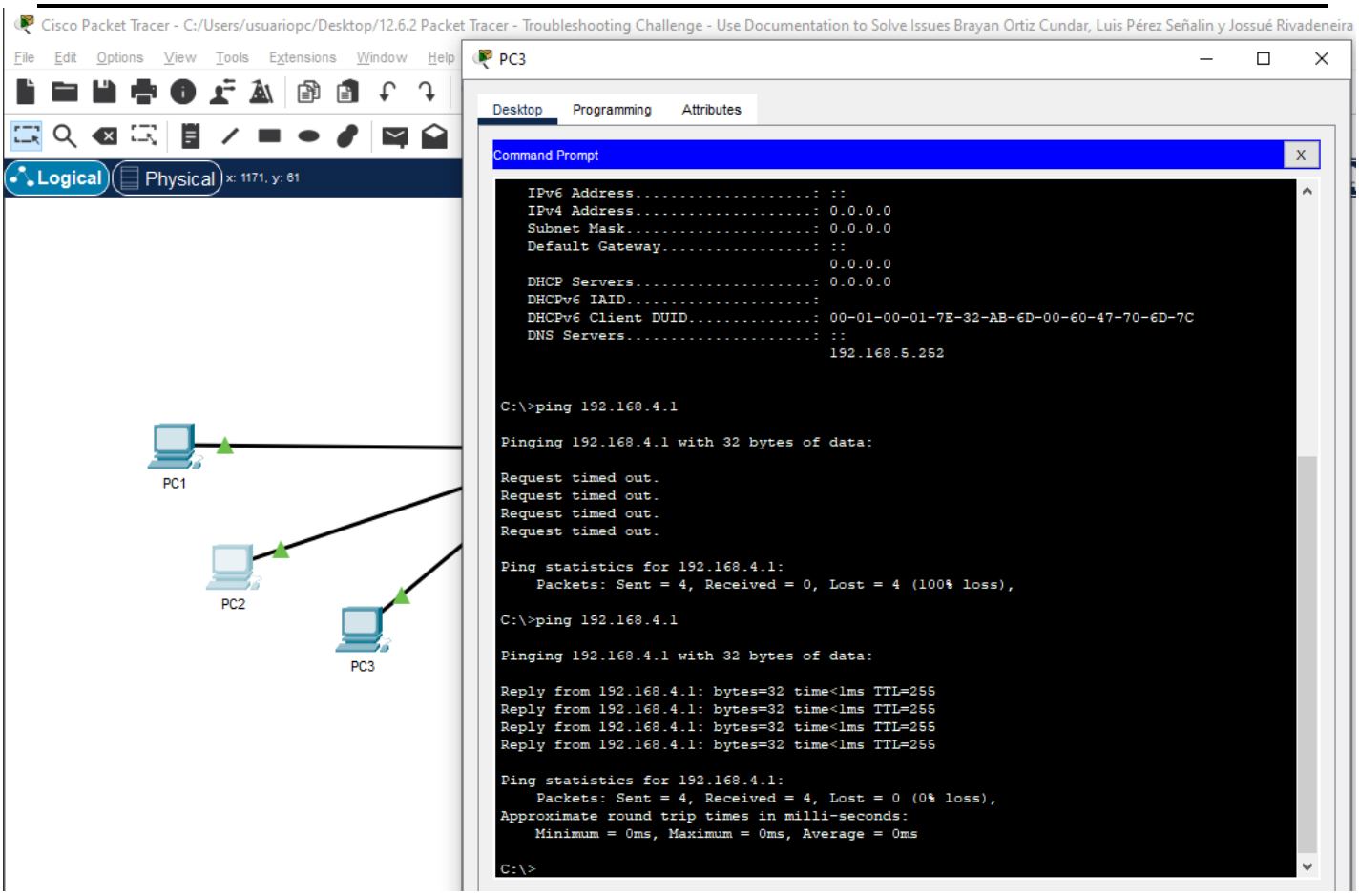
From the hosts which have communication problems, use ICMP tools to determine where in the network these problems may be located. From the host PCs, access devices in the network and display configurations and operational status.

Se empezará con el problema de la PC3, para ello volveremos al router Factory ya que allí se encontraba la dirección 192.168.4.1 que es el default Gateway de PC3:

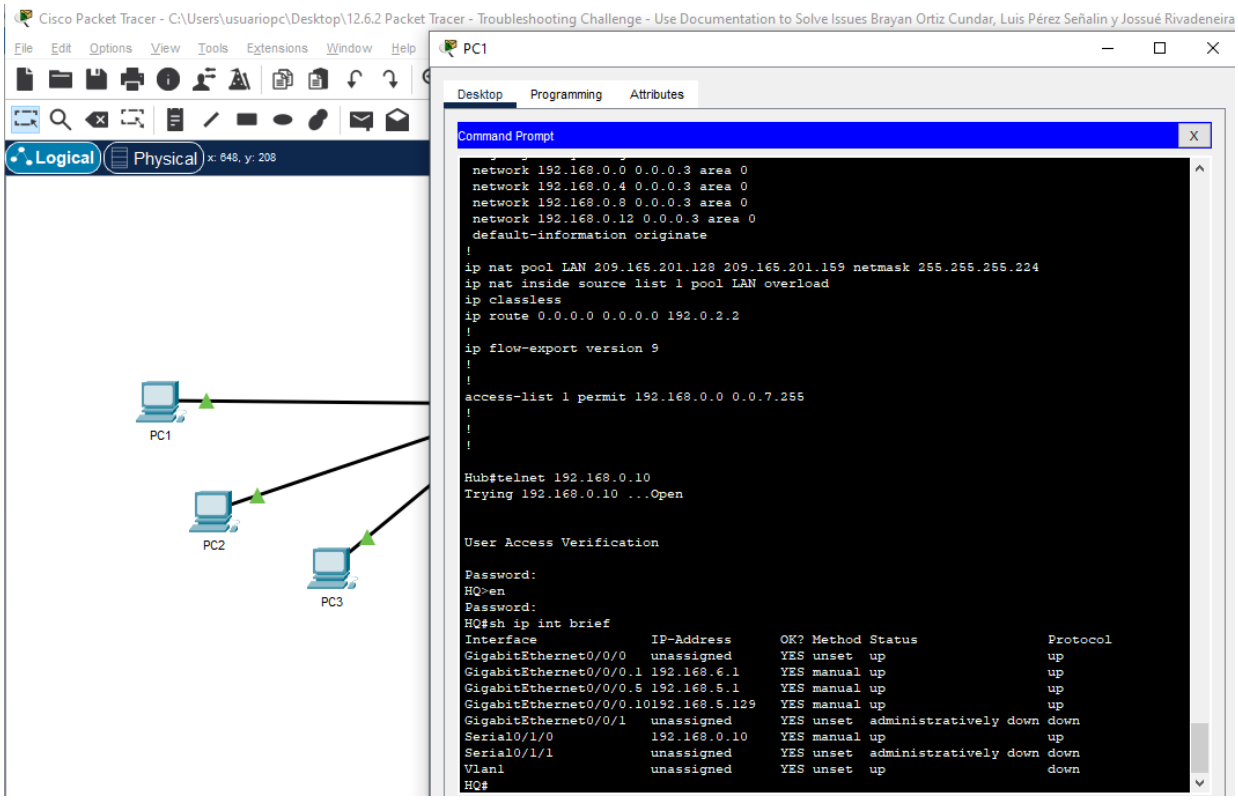


Como se puede observar, el problema que tenía PC3 es que la interfaz que lo conecta con Factory se encuentra apagada, para solucionarlo solo la activaremos:

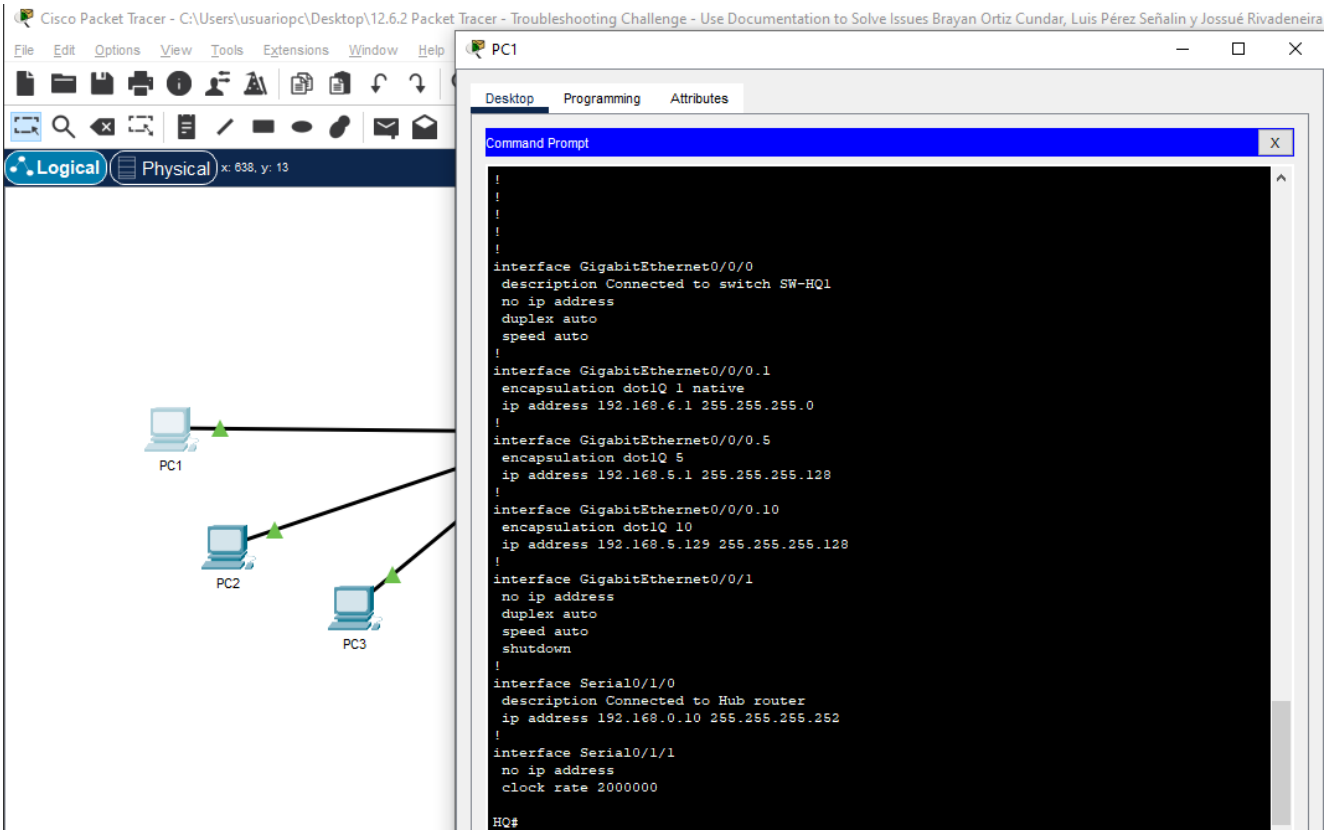
```
Factory#config t
Enter configuration commands, one per line.  End with CNTL/Z.
Factory(config)#int g0/1/0
%Invalid interface type and number
Factory(config)#no shut
                  ^
% Invalid input detected at '^' marker.

Factory(config)#int g0/0/1
Factory(config-if)#no shut

Factory(config-if)#do wr
Building configuration...
[OK]
Factory(config-if)#
```

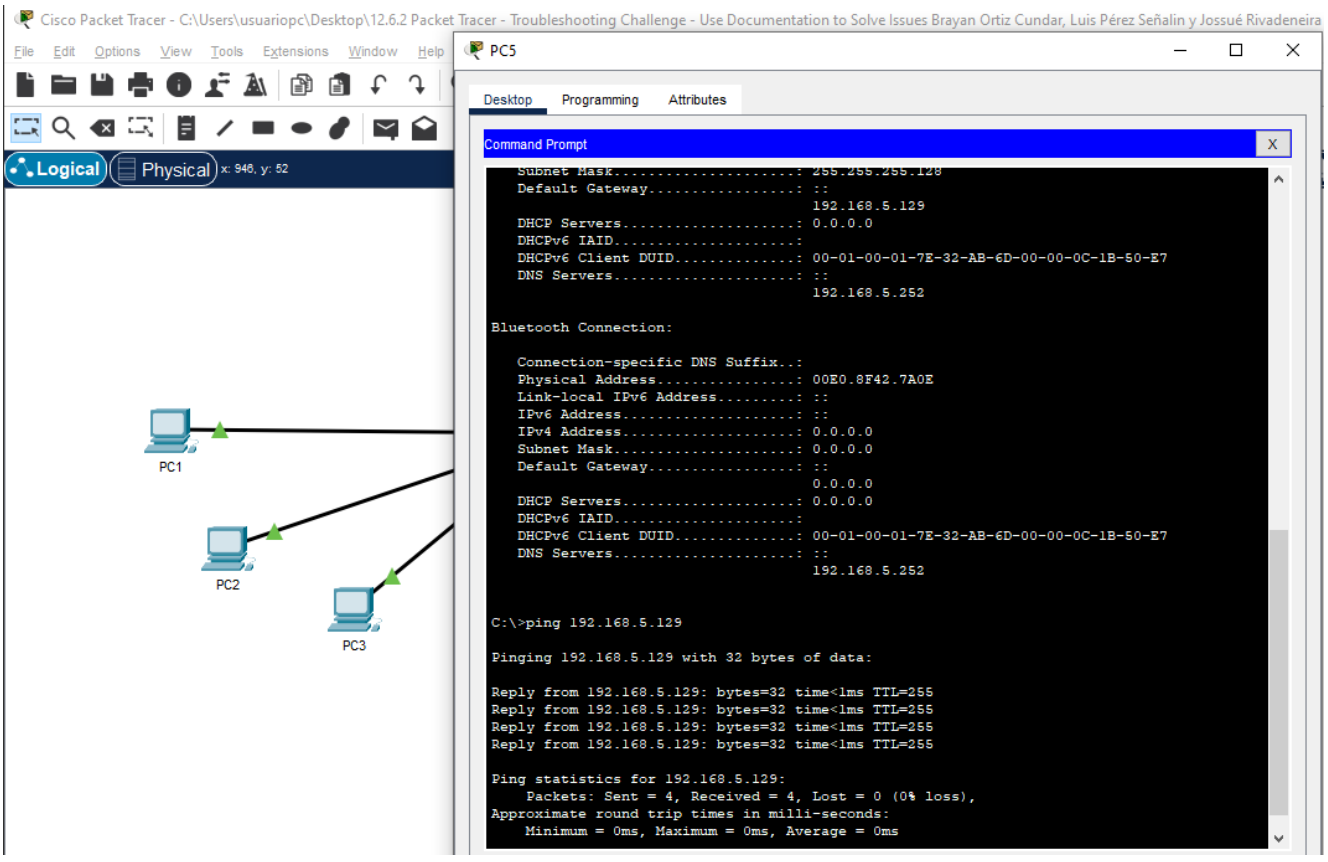


Para PC5 que no tiene default Gateway, usaremos la red de la PC y veremos que la puerta de enlace que le corresponde se encuentra en HQ:

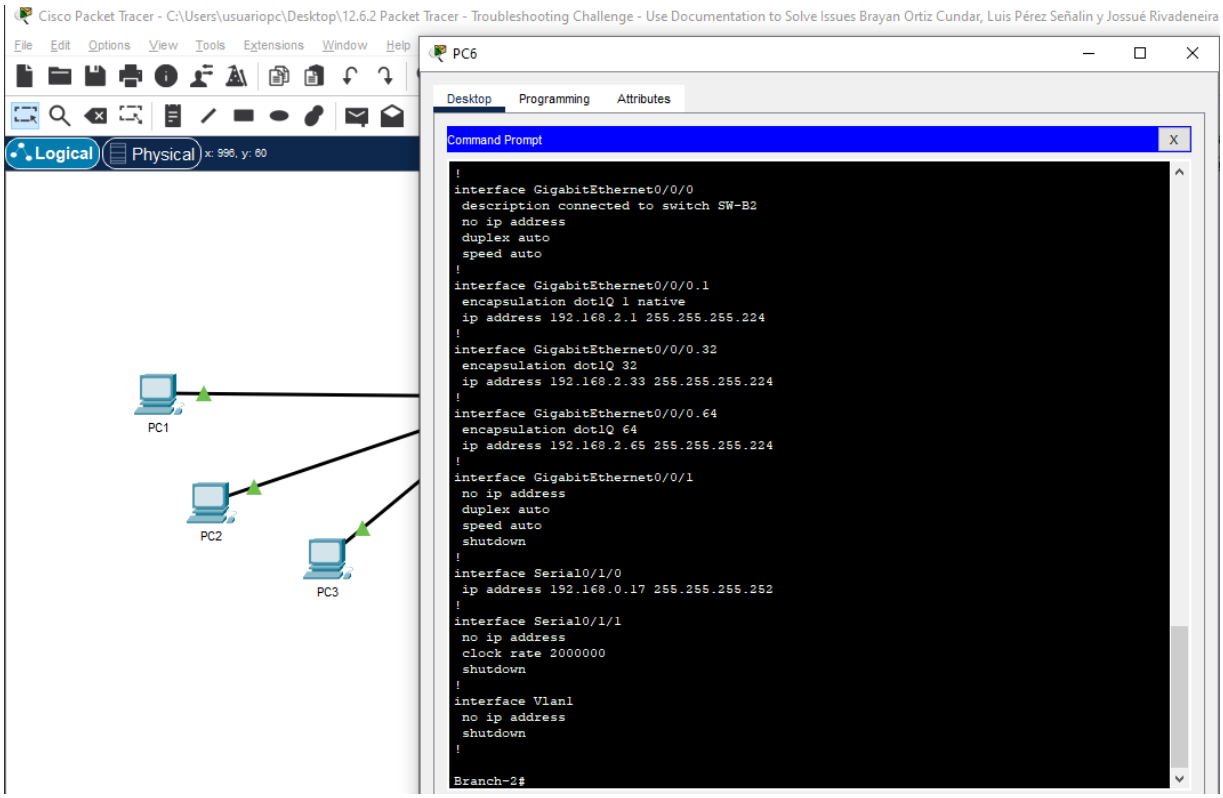


Por lo tanto, la default Gateway que le corresponde es 192.168.5.129, ya que la 5.1 no puede contener la dirección de PC5:

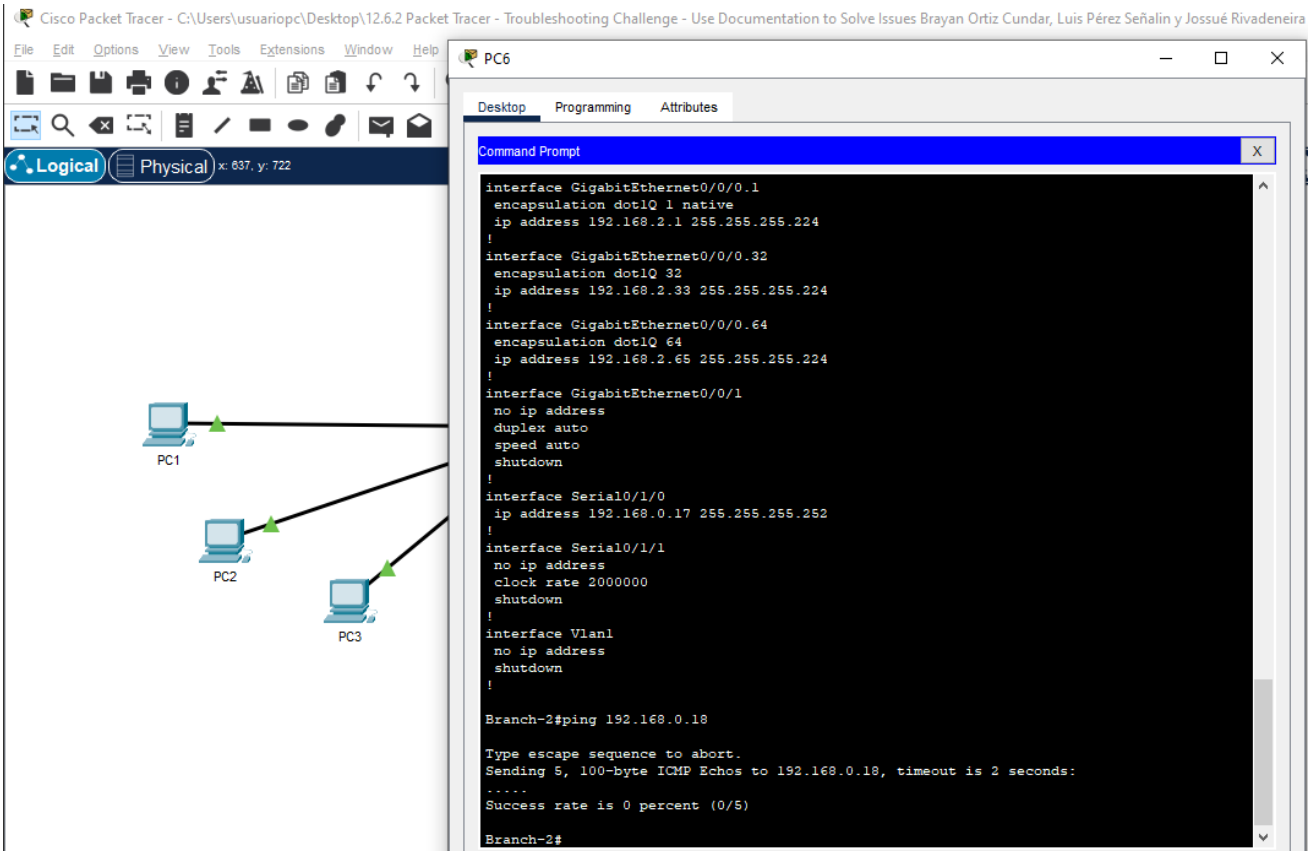




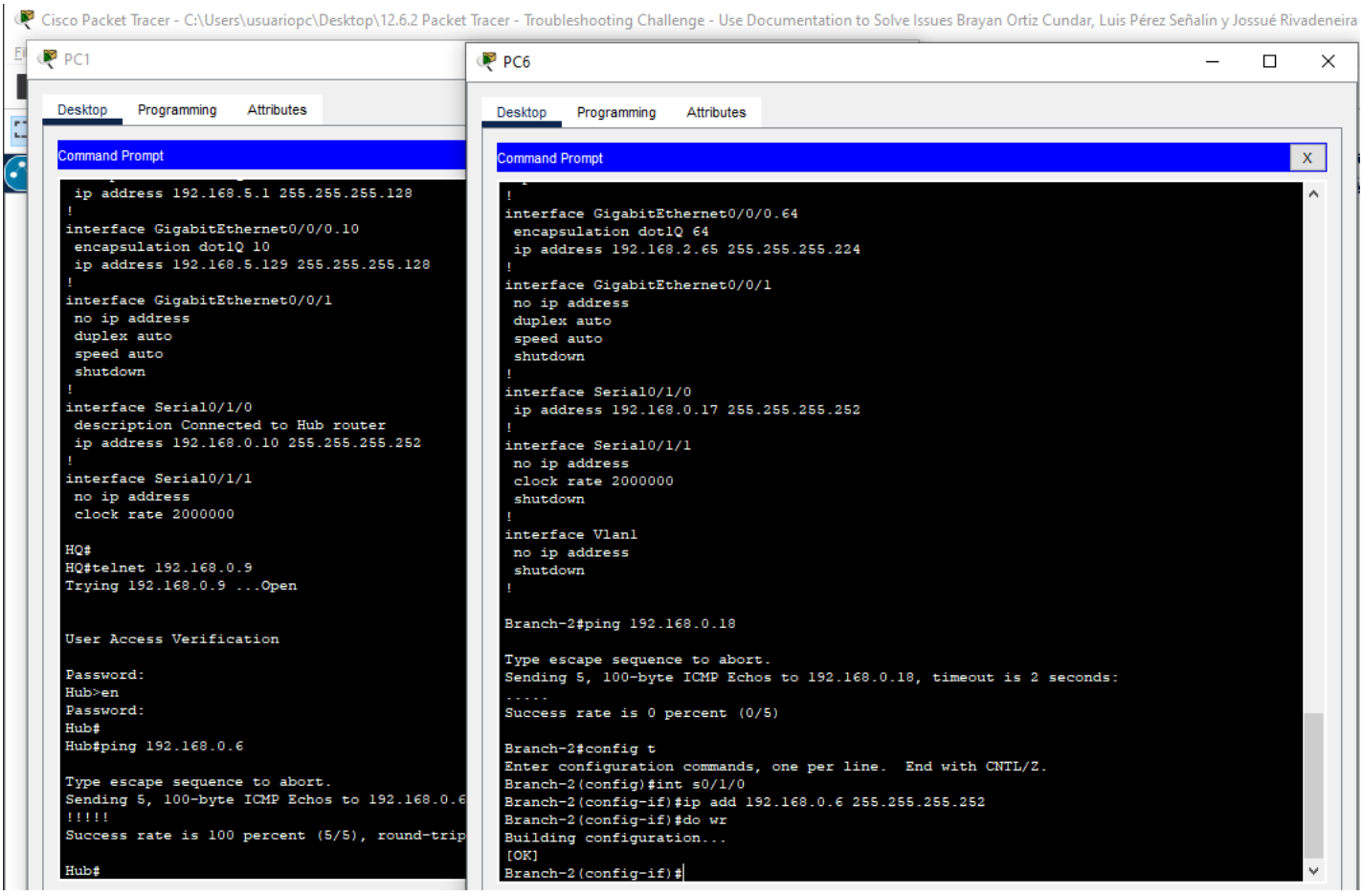
Ahora veamos qué pasaba en PC6 y PC7, entramos a Branch-2:



Como sabemos que en la red “192.168.0.17” solo puede haber 2 otros host, hacemos ping al otro host:



Extrañamente no hay respuesta; anteriormente, en las interfaces del Hub, se podía ver que Branch-2 tenía la dirección “192.168.0.5” por lo que podríamos suponer que la dirección “192.168.0.17” que contiene Branch-2 es incorrecta, y que la que debería tener es “192.168.0.6”:

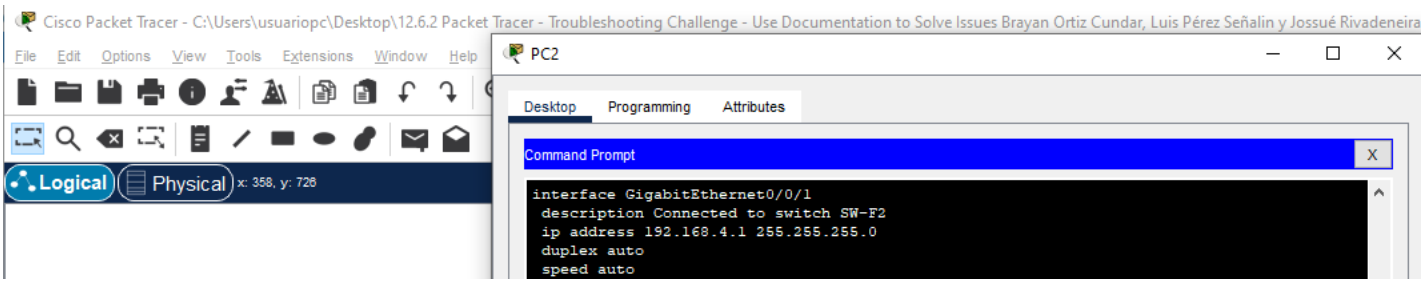


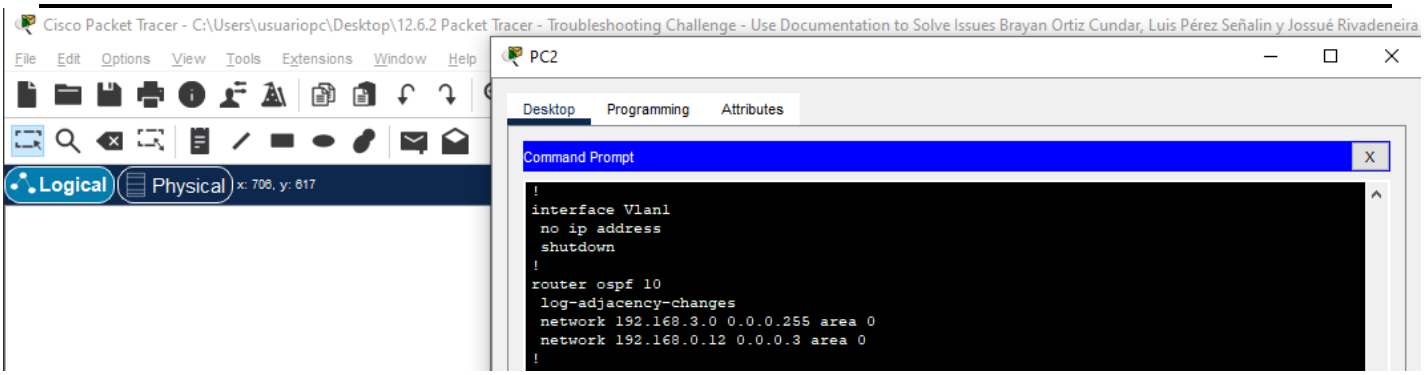
Efectivamente, el problema era la dirección del serial de Branch-2, por lo cual ahora se solucionaría el problema de PC6 y PC7 que estaban conectados a Branch-2.

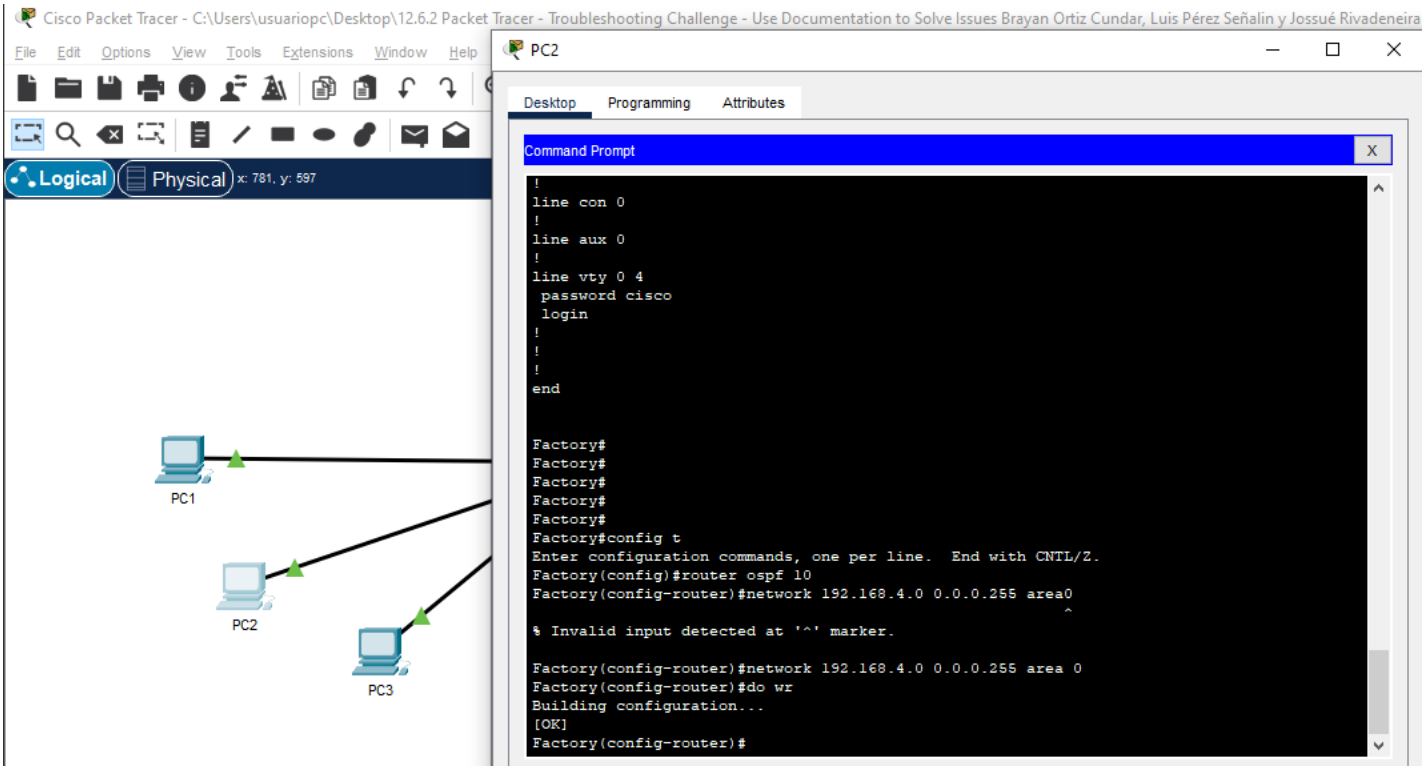
Part 3: Repair the Network

After locating the issues, reconfigure the devices to repair the connectivity problem. Use your documentation from the previous activity to help you.

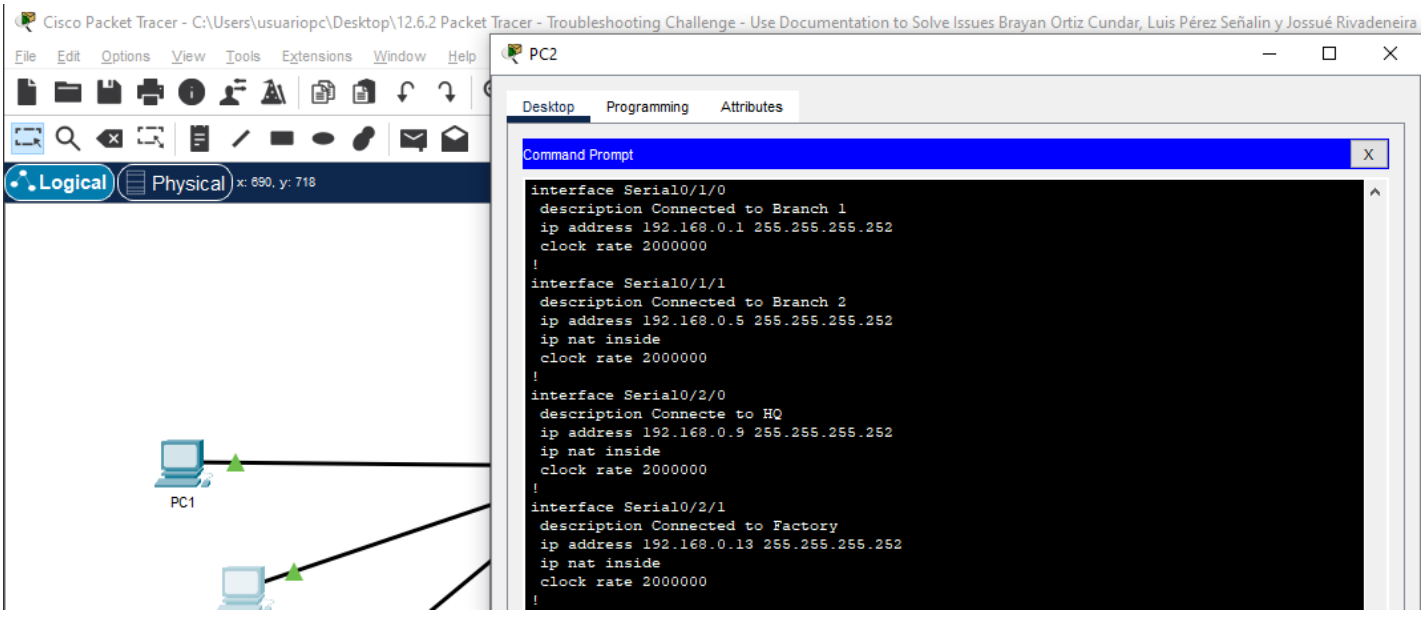
Revisando con el commando “show running-config” en el Router “Factory”, hay una interface con una dirección cuya red no se encuentra en el router OSPF, así que hay que agregarla:

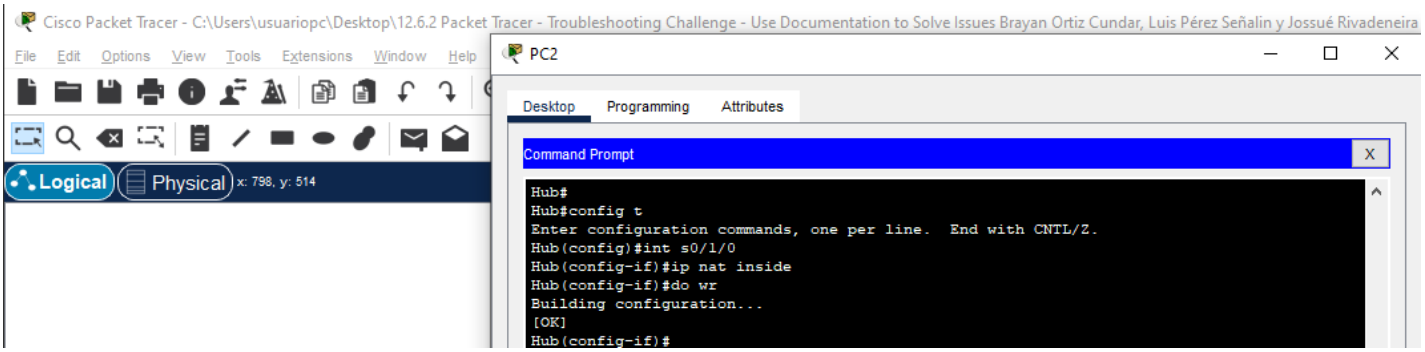






También, en el Hub, una de las interfaces activas seriales, no tiene NAT, así que hay que agregarle:





Part 4: Document the Issues

Record your issues in the table below.

Device	Issue	Action
PC3/Router “Factory”	Interfaz G0/0/1 apagada	Levantar la interfaz G0/0/1
PC5	No tiene Default Gateway	Se agregó la dirección del Default Gateway
PC6/PC7/Router “Branch-2”	Dirección IP errónea en la interfaz S0/1/0	Cambiar la dirección por la correspondiente a Branch-2
Router “Factory”	Red faltante en OSPF 10	Se agregó la red que contiene a la dirección “192.168.4.1”
Router “Hub”	Interfaz S0/1/0 sin NAT	Agregar NAT a la interfaz

Captura de pantalla de completitud: