

PRACTICAL LAB: INTRO TO PACKET TRACER - MY FIRST NETWORK



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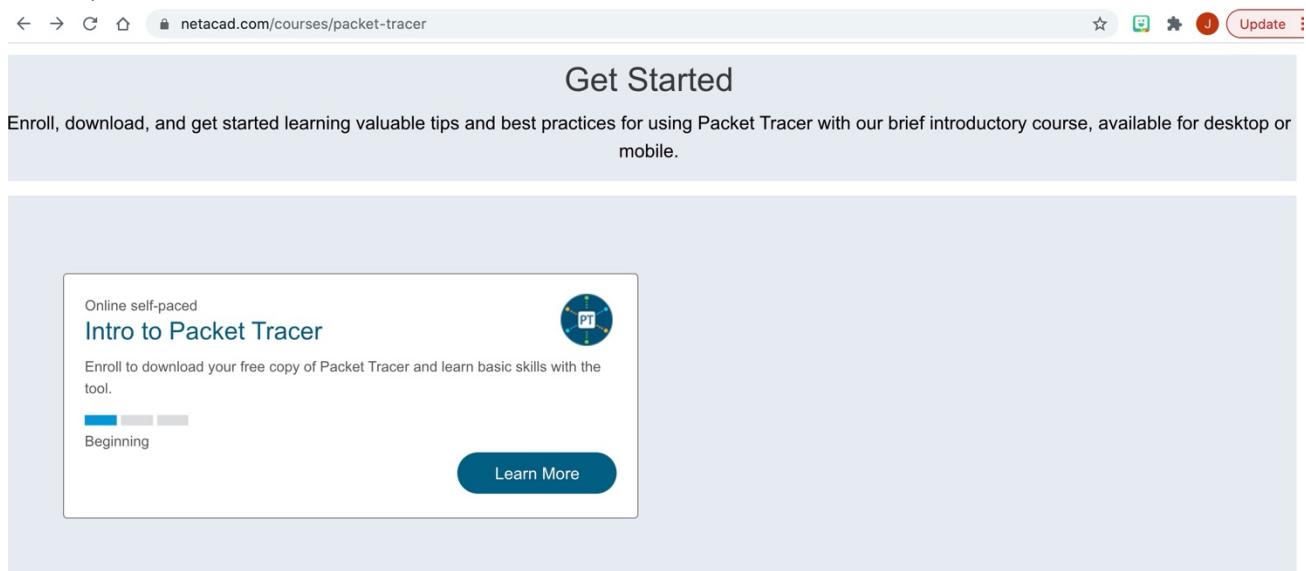
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1 Introduction

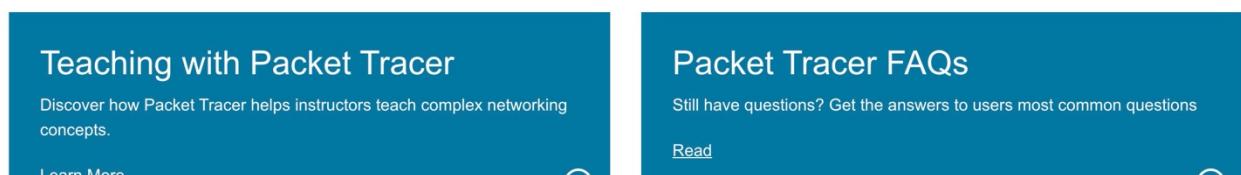
For this practical we will be using *Cisco Packet Tracer (student edition)*, a tool provided by Cisco to build and test Cisco networks.

2 Install Packet Tracer

Please download and install the Packet Tracer application. You can access this on university PCs or you can download it once you have enrolled to the ‘Intro to Packet Tracer’ on netacad.com (see below).



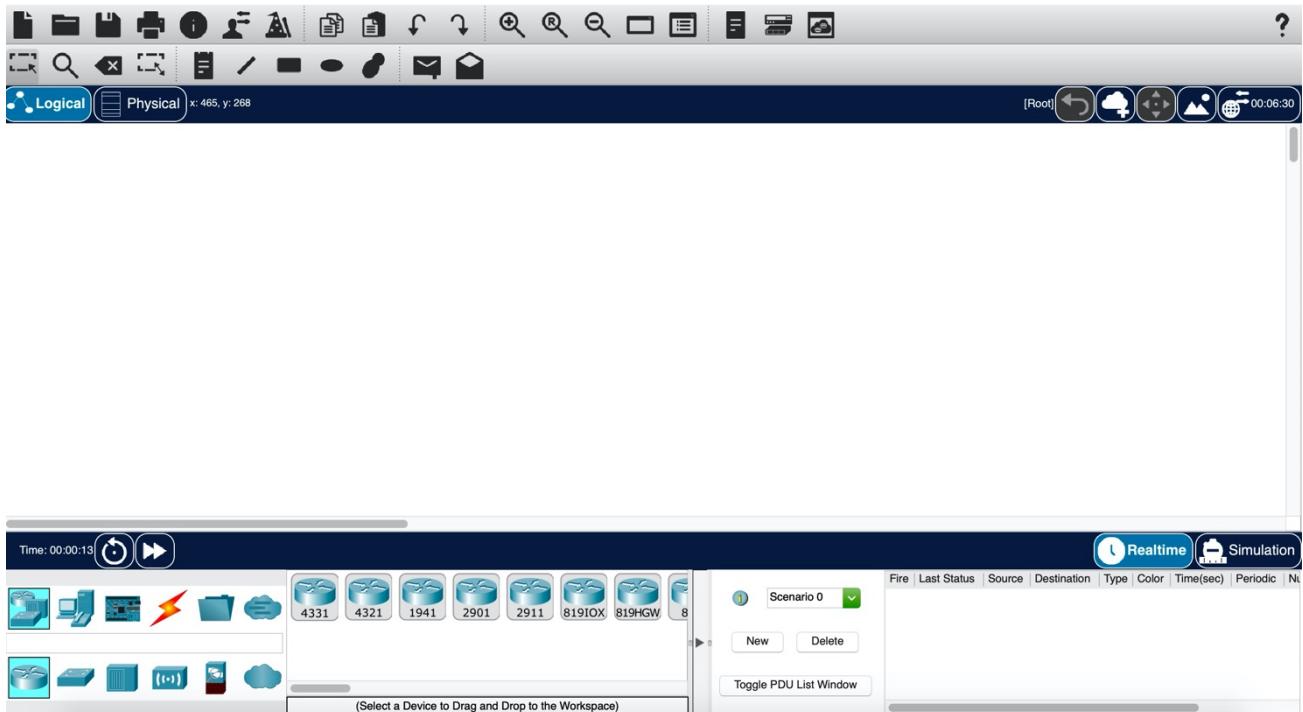
The screenshot shows a web browser window with the URL netacad.com/courses/packet-tracer. The page title is "Get Started". A sub-headline reads: "Enroll, download, and get started learning valuable tips and best practices for using Packet Tracer with our brief introductory course, available for desktop or mobile." Below this is a card for the "Intro to Packet Tracer" course. The card includes the text "Online self-paced", the course name, a description "Enroll to download your free copy of Packet Tracer and learn basic skills with the tool.", a progress bar showing "Beginning", and a "Learn More" button. To the right of the card is a circular icon with a network diagram and the letters "PT".



The screenshot shows two blue-themed sections on the same page. The left section is titled "Teaching with Packet Tracer" and contains the text "Discover how Packet Tracer helps instructors teach complex networking concepts." with a "Learn More" button. The right section is titled "Packet Tracer FAQs" and contains the text "Still have questions? Get the answers to users most common questions" with a "Read" button.

Run the install. Once completed, the *Cisco Packet Tracer Student* shortcut should appear on your desktop. Double click the shortcut, you should see a screen similar to the one shown in the figure below.

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3 Using Packet Tracer

Watch the *Interface Overview* video. This is accessed by clicking Help, Tutorials and selecting Interface Overview in the Getting Started section.

Official Packet Tracer Tutorials
The following tutorials demonstrate the basic functions, features, and aspects of Packet Tracer.

1 Getting Started

- 1-0 Getting Started**
 - Learn how to start the application.
- 1-1 Interface Overview**
 - See section 15-1
 - Learn how to view and analyze network traffic.
- 1-2 Options**
 - Learn how to customize the application settings.

2 Logical Workspace

- 2-1 Creating A Network**
 - Learn how to create a basic network topology.
- 2-2 Custom Devices**
 - Learn how to create custom network devices.
- 2-3 Clustering A Network**
 - Learn how to create, arrange, uncluster, delete, and connect clusters.
- 2-4 Annotating A Network Topology**
 - Learn how to add annotations to network diagrams.

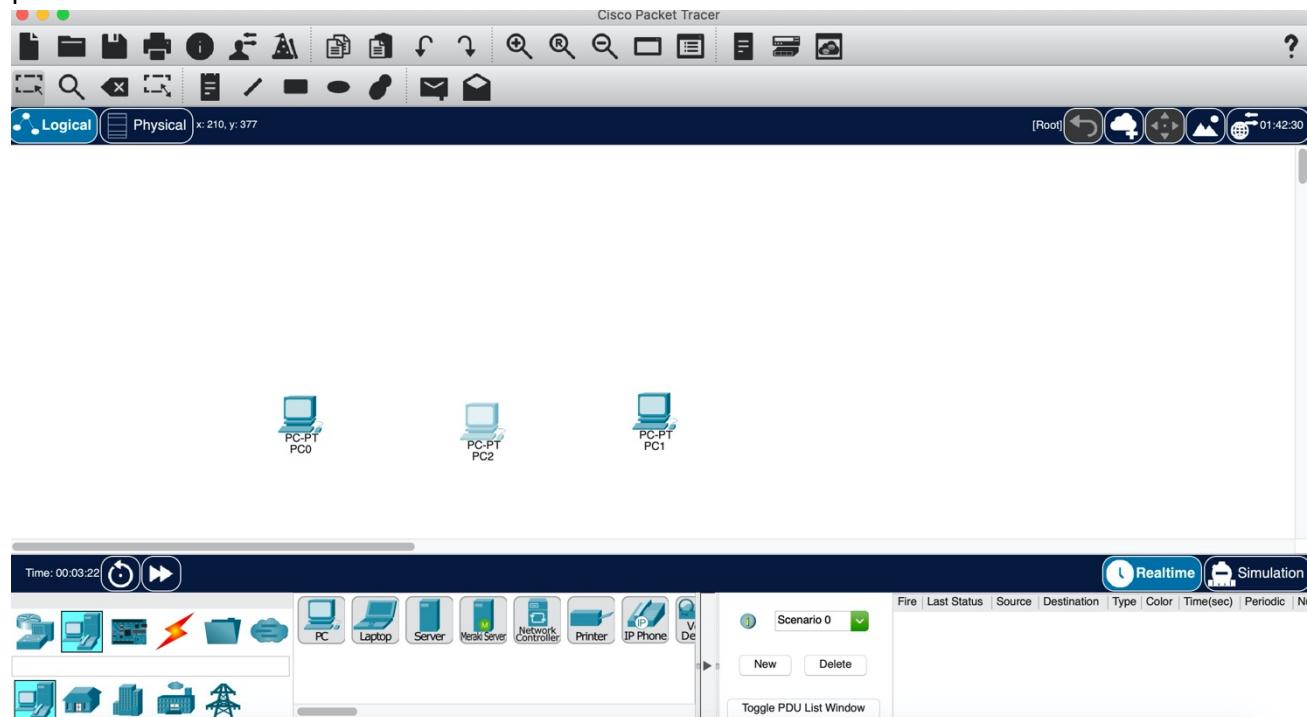
A video player window showing a tutorial video. The video frame displays the Cisco Packet Tracer interface with a network diagram. The video controls include a play button, a progress bar at -1:46, and a volume icon. The video title is 'which allows users to create'.

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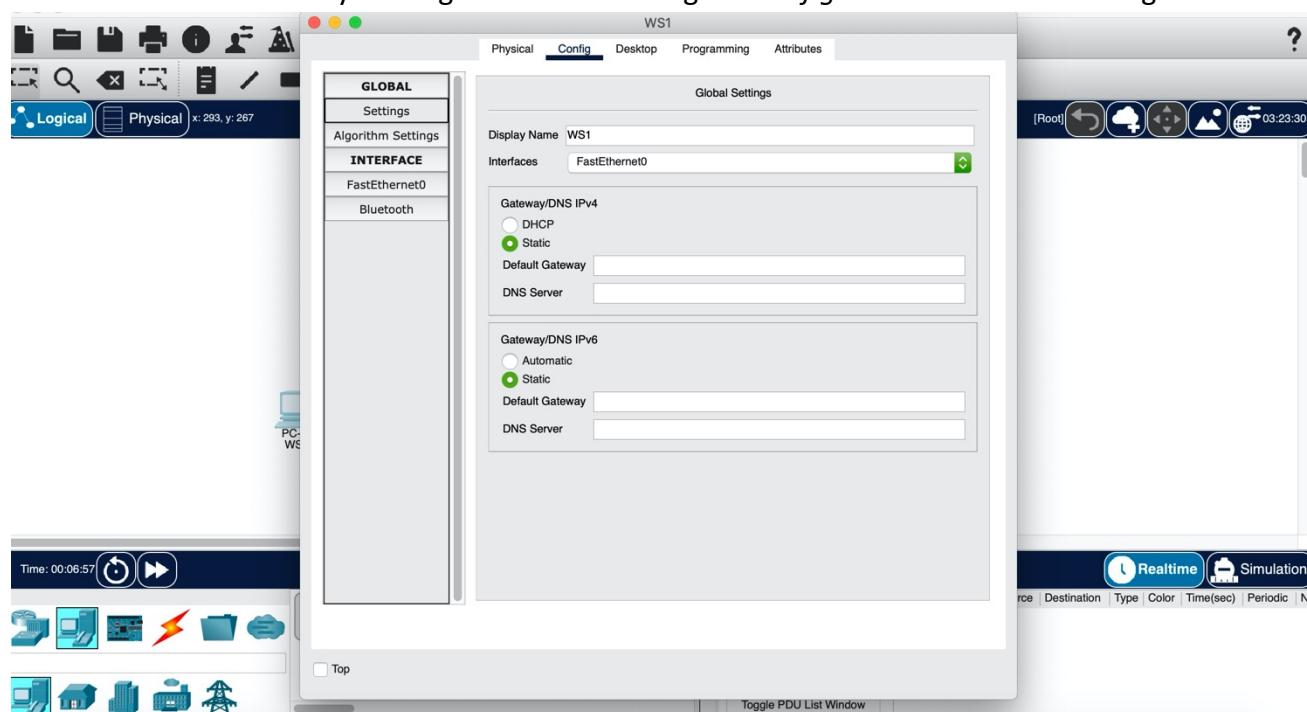
4 Start building your network

4.1 Workstations

Click on the *End Device* Icon located in the bottom left hand corner. Add the PCs/workstations by dragging and dropping onto the work area. Add 2 more workstations, repeat the drag and drop process.

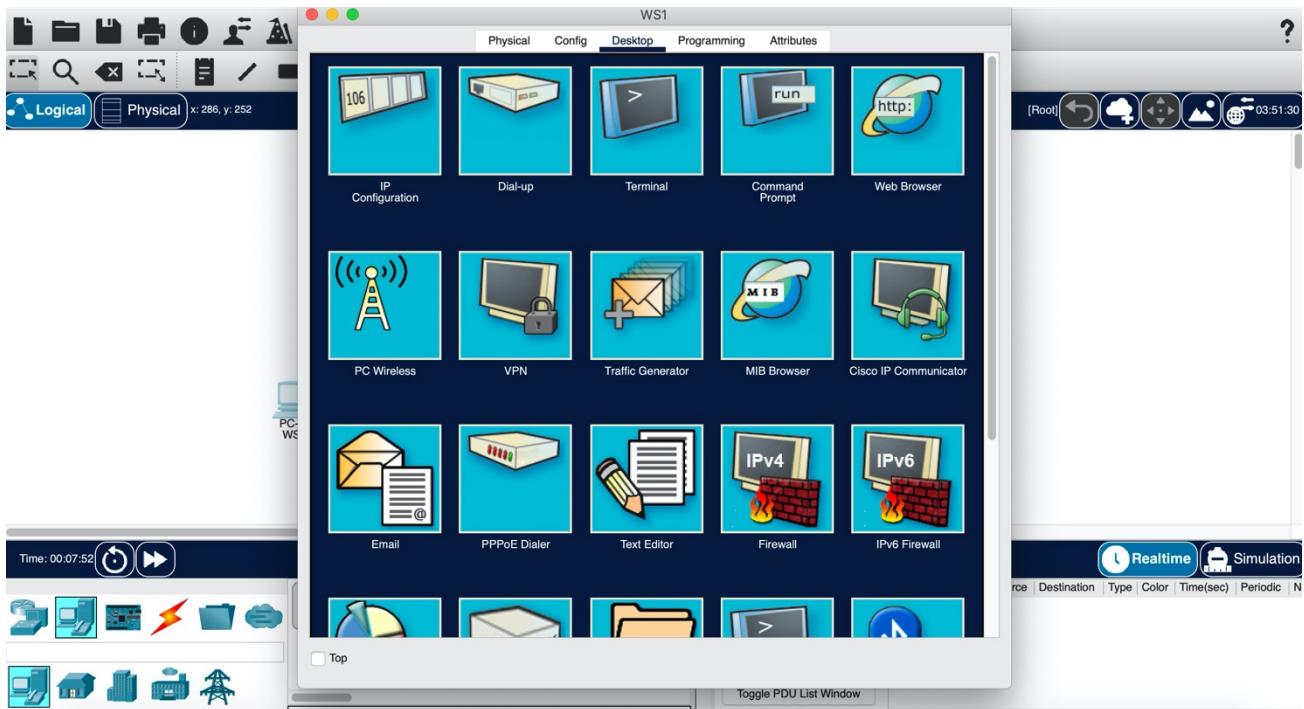


Label each workstation by clicking on it and selecting the *config* tab as detailed in the figure below.

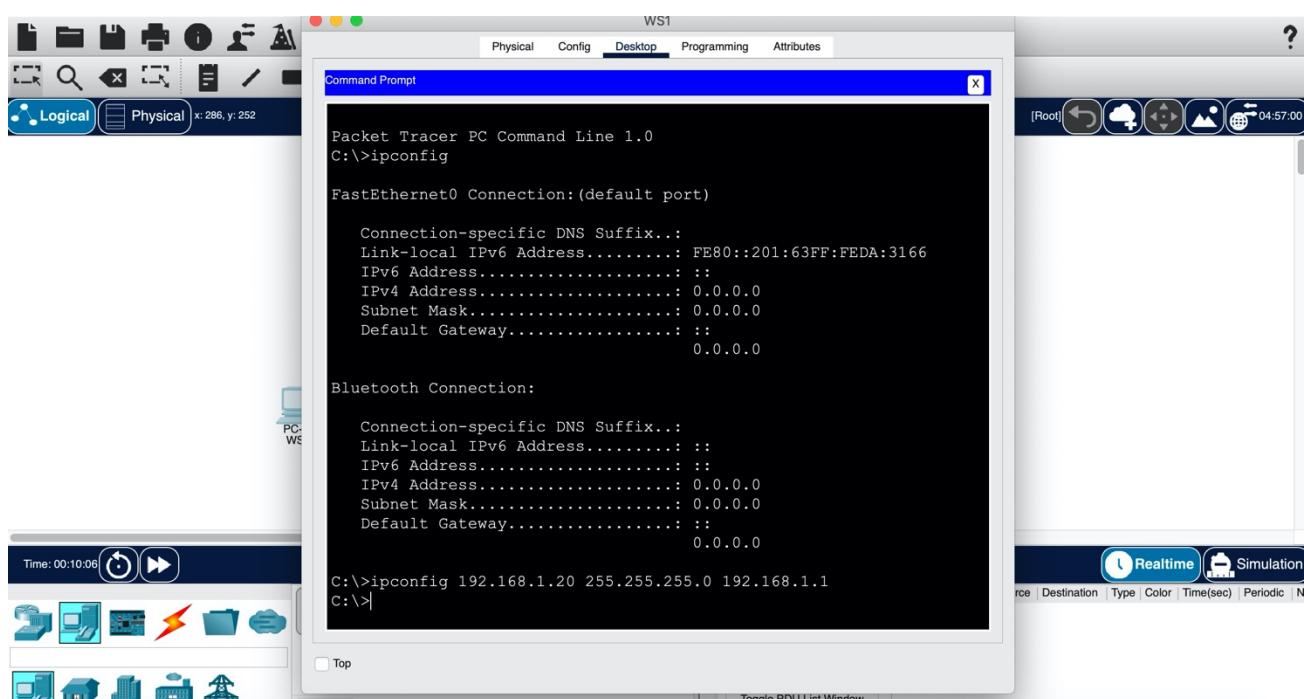


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Configure the IP for each workstation. Access the *Command Prompt* from the Desktop tab, as illustrated in the figure below.

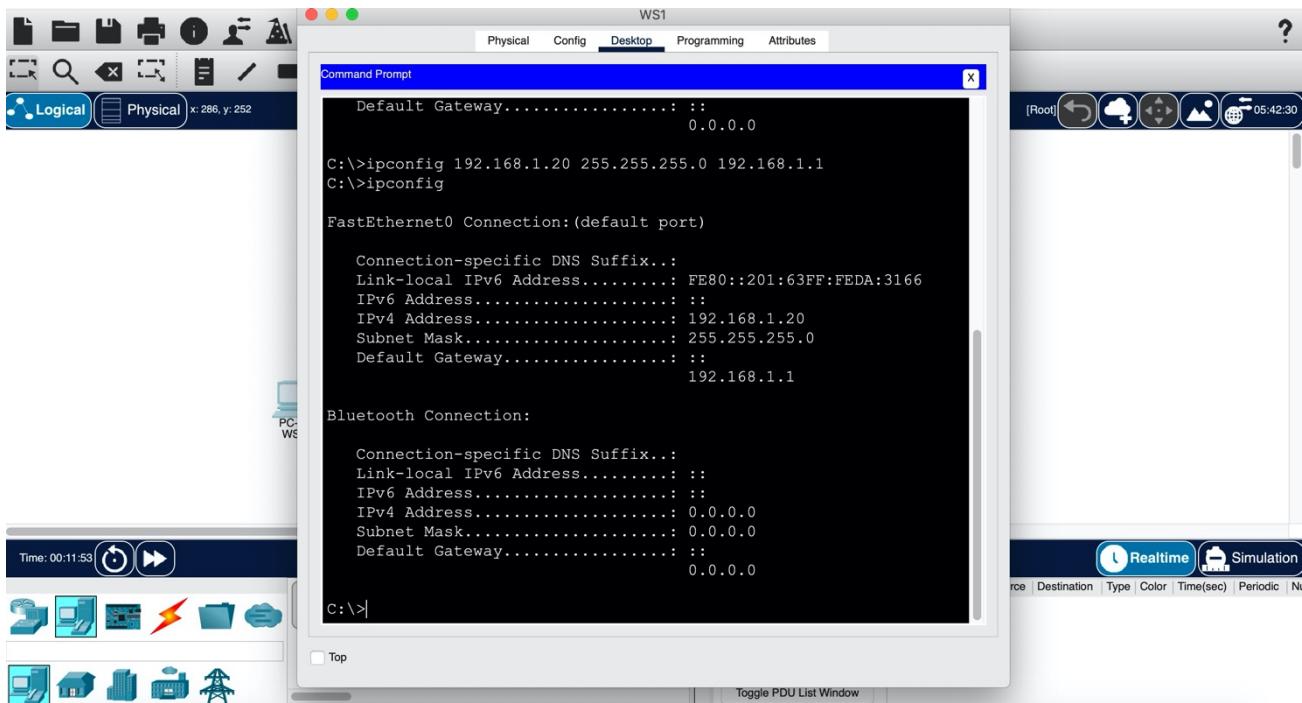


Enter the following command at the command prompt, as illustrated in the figure below. ipconfig 192.168.1.20 255.255.255.0 192.168.1.1



Check the IP configuration by typing: *ipconfig*

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Note: If you have no *Default Gateway* value. Enter this value using the *IP Configuration* link located in the Desktop tab.

Add two more workstations using the previous commands already documented.

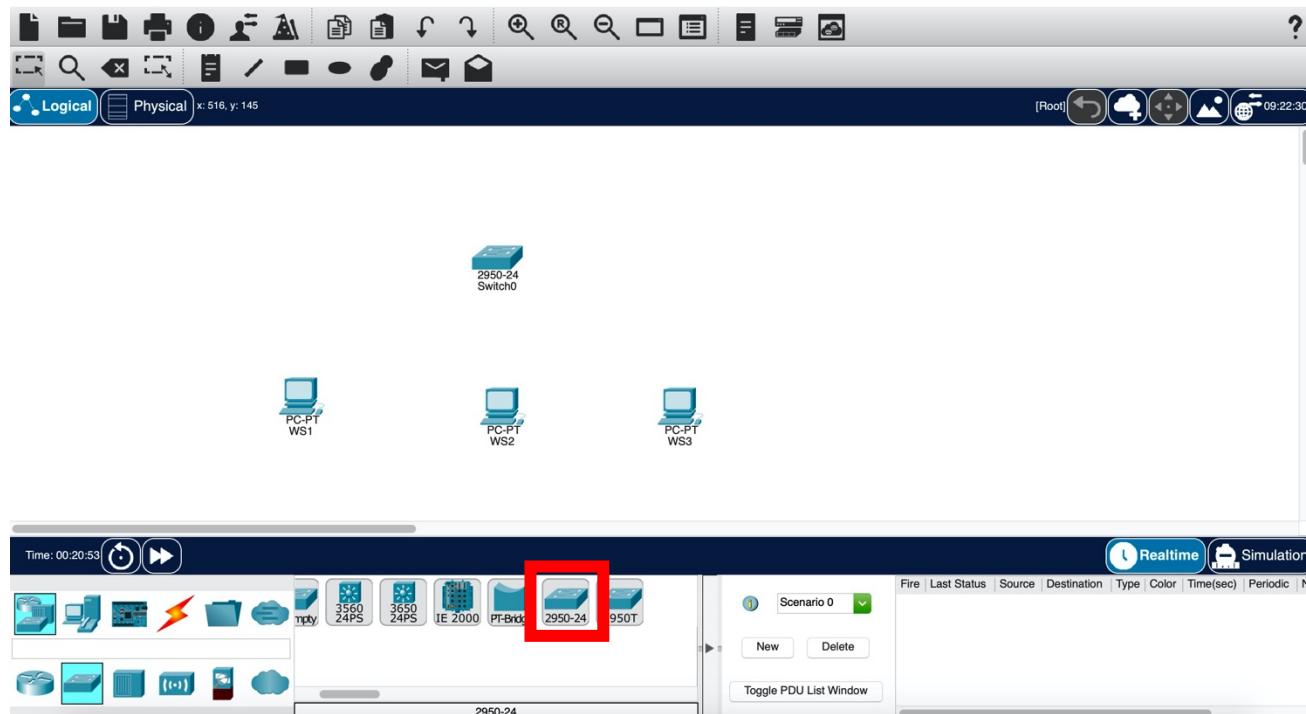
Hostname: WS2
IP address: 192.168.1.21
Subnet mask: 255.255.255.0
Default Gateway: 192.168.1.1

Hostname: WS3
IP address: 192.168.1.22
Subnet mask: 255.255.255.0
Default Gateway: 192.168.1.1

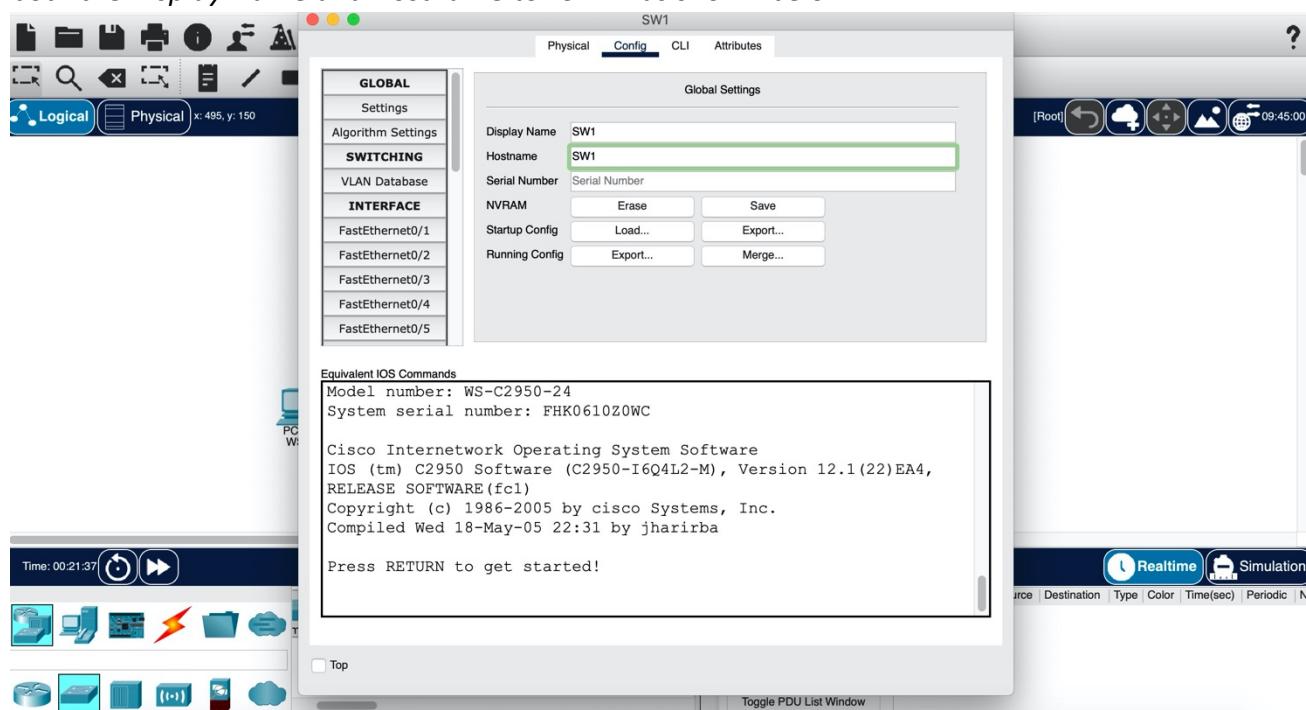
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4.2 Adding a network switch

Select the Switches icon as detailed in the figure below. Select the Cisco 2950-24. This is a 2900 series switch with 24 network ports. Drag this switch icon onto the work area.



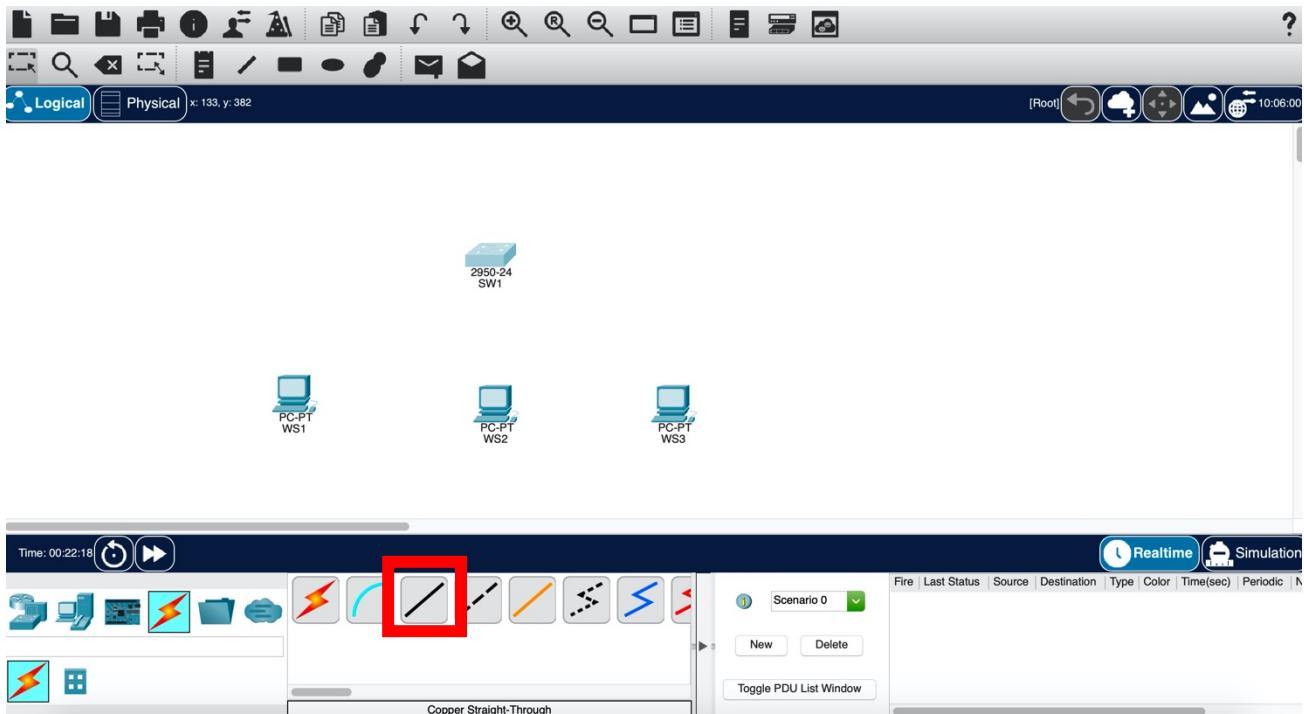
Name the switch by clicking on it and selecting the *Config* tab as detailed in the next figure. Change both the *Display Name* and *Hostname* to “SW1” as shown below.



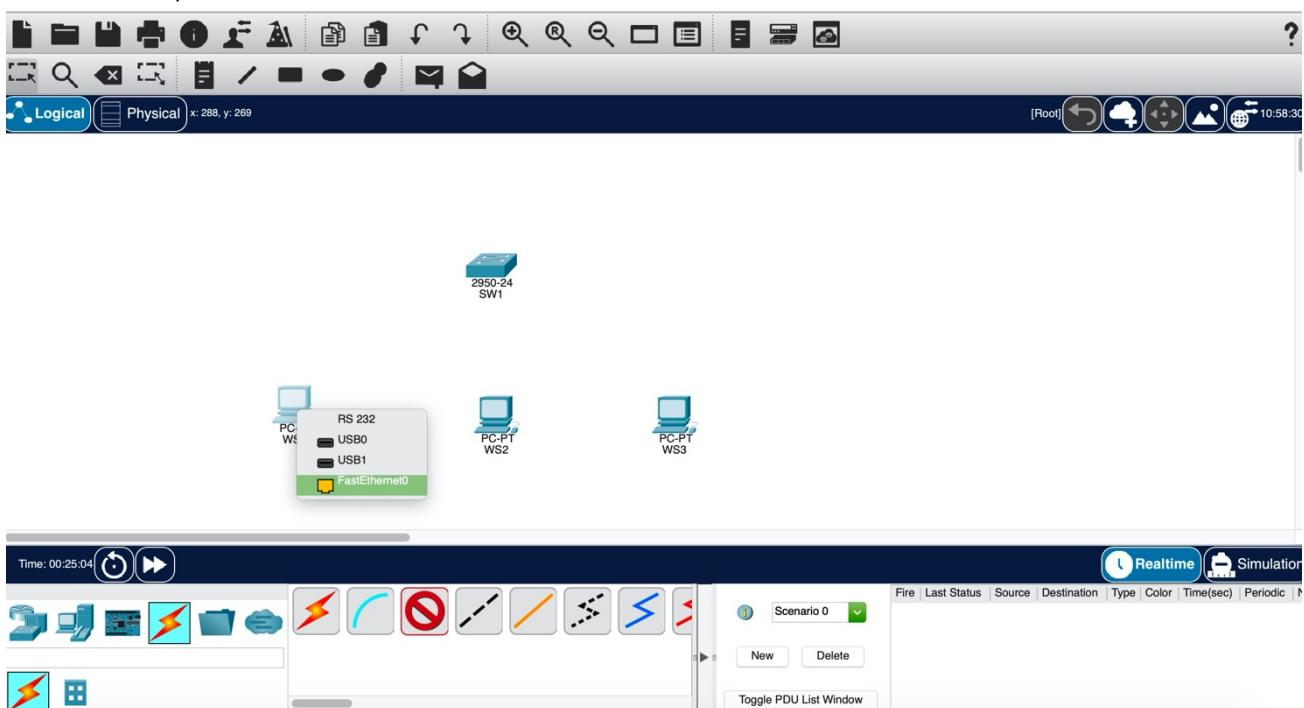
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4.3 Adding connections

Now we need to add connections between the switch and workstations. Select *Connections*, then select *Copper Straight-through*.

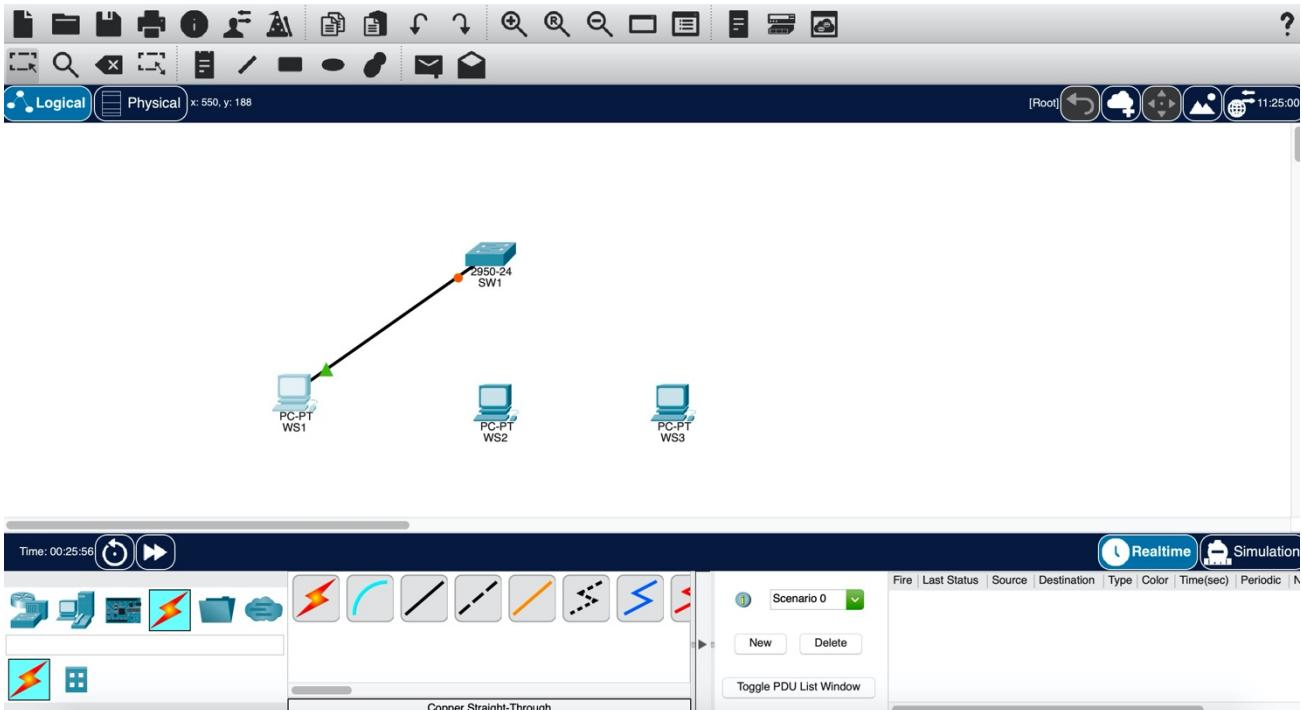


Click on *WS1*, select *FastEthernet0*.



Click on the *Switch*, select *FastEthernet0/1*.

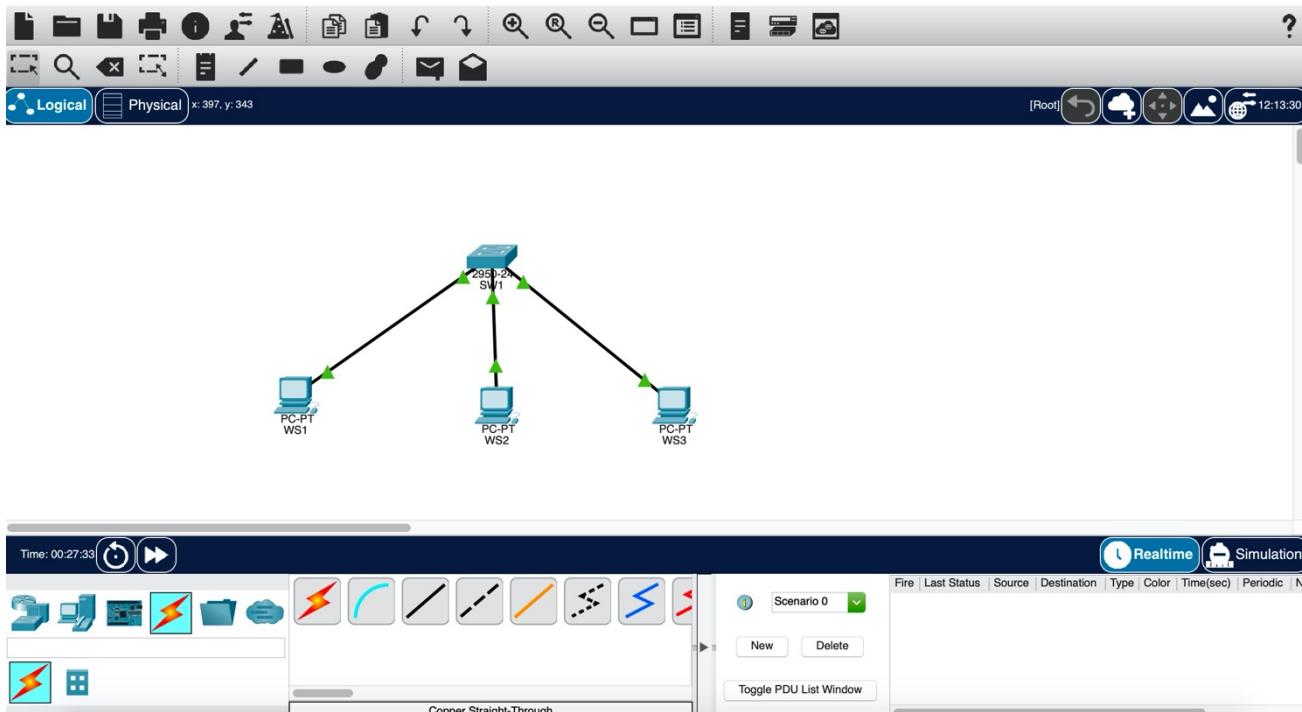
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You have now created your first network connection.

Repeat this for each workstation. Selecting *FastEthernet0/2* for WS2 and *FastEthernet0/3* for WS3. You have to select the *Copper Straight-through* (CST) connection for each new connection.

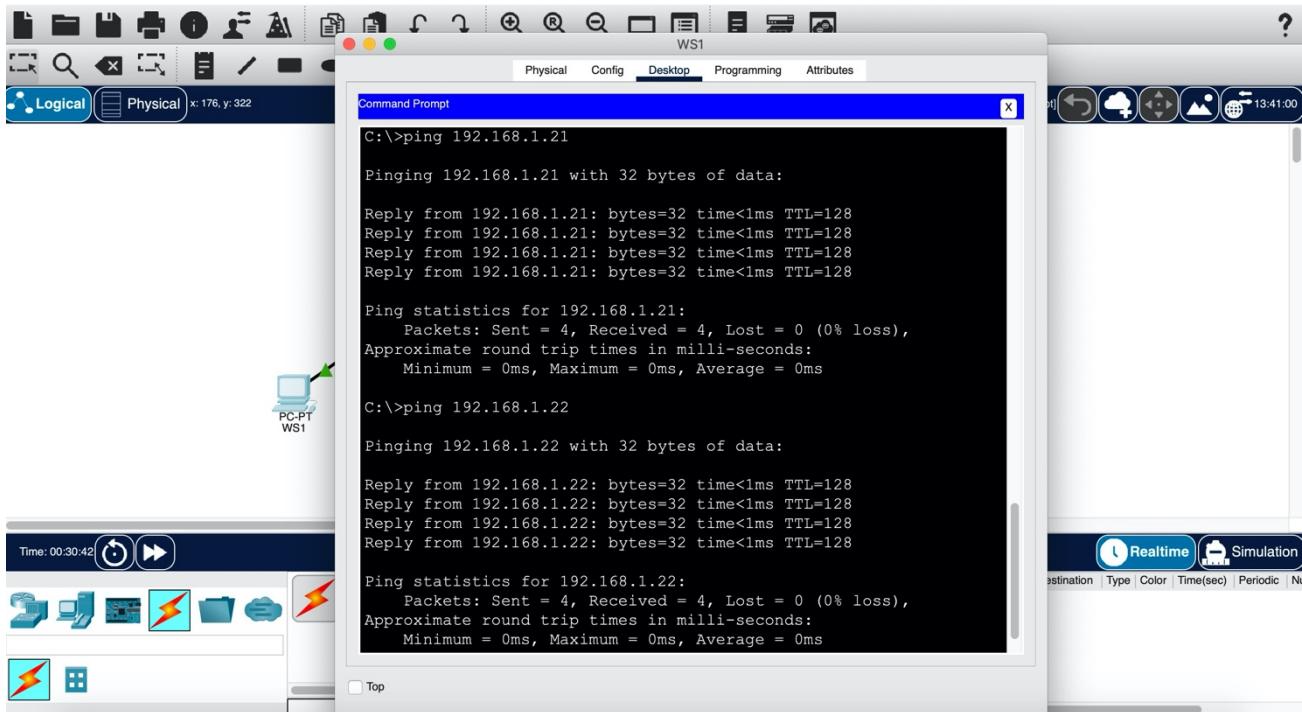
Your network should look like the figure below:



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4.4 Testing the network

Click WS1, click the *Desktop* tab. Now click the *Command Prompt* icon. Ping WS2 (192.168.1.21) and WS3 (192.168.1.22). You should receive responses as detailed below. If not, investigate the IP configuration of your workstations.



The IP address information for each workstation.

Hostname: WS1
IP address: 192.168.1.20
Subnet mask: 255.255.255.0
Default Gateway: 192.168.1.1

Hostname: WS2
IP address: 192.168.1.21
Subnet mask: 255.255.255.0
Default Gateway: 192.168.1.1

Hostname: WS3
IP address: 192.168.1.22
Subnet mask: 255.255.255.0
Default Gateway: 192.168.1.1

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4.5 Adding additional workstations

Now create 3 more workstations connected to a different switch, use the same process as already outlined in steps 4.1, 4.2, 4.3 and 4.4.

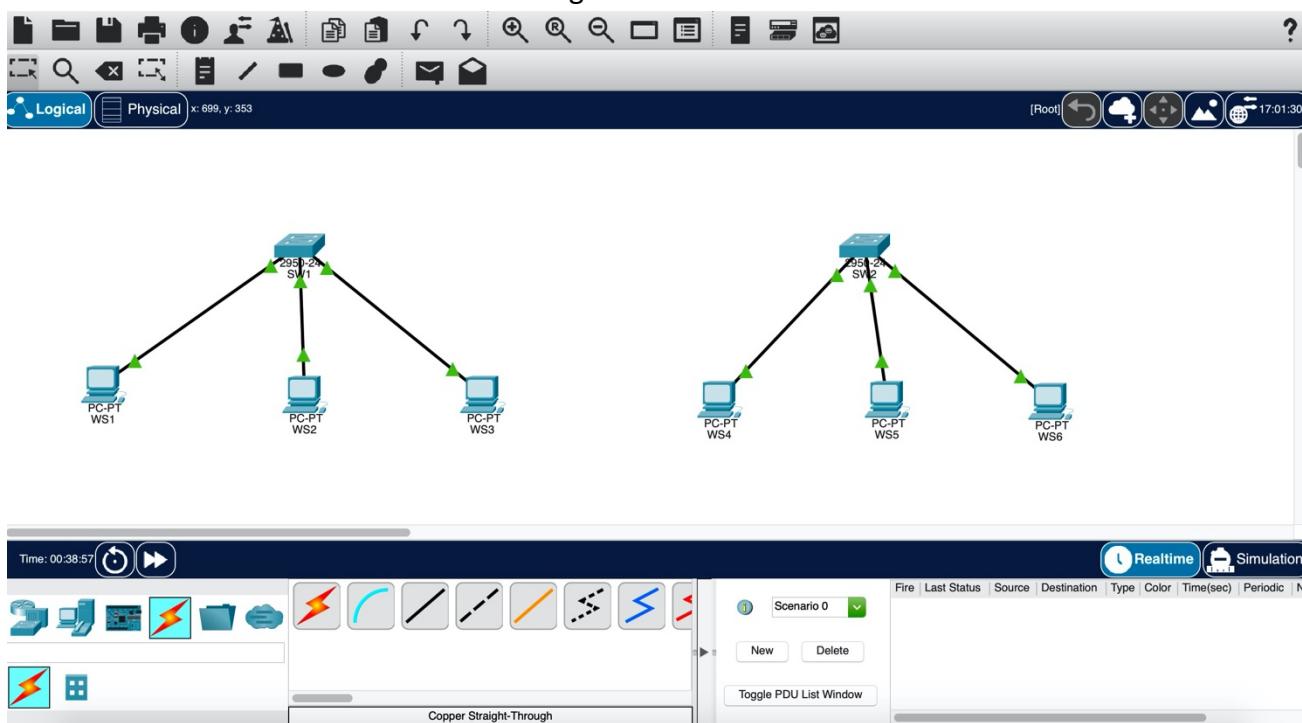
Hostname: WS4
IP address: 192.168.2.20
Subnet mask: 255.255.255.0
Default Gateway: 192.168.2.1

Hostname: WS5
IP address: 192.168.2.21
Subnet mask: 255.255.255.0
Default Gateway: 192.168.2.1

Hostname: WS6
IP address: 192.168.2.22
Subnet mask: 255.255.255.0
Default Gateway: 192.168.2.1

Name the switch SW2.

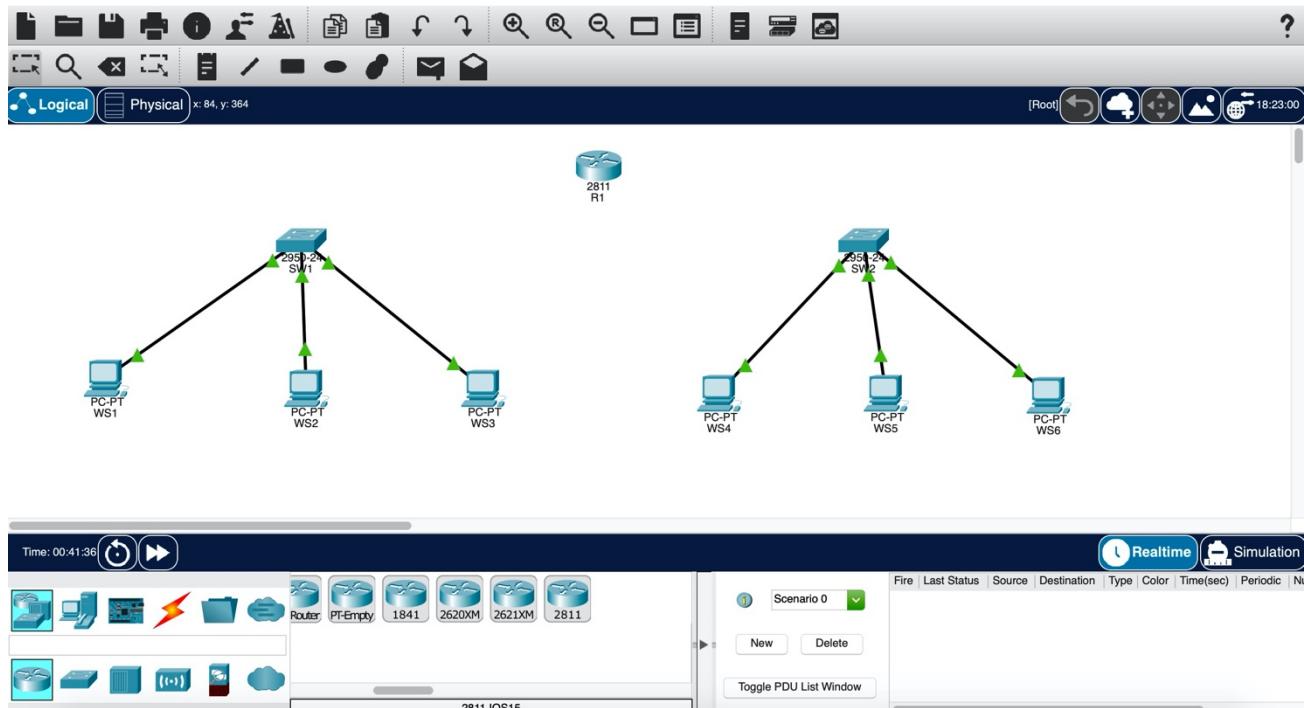
Your network should now look like the figure below.



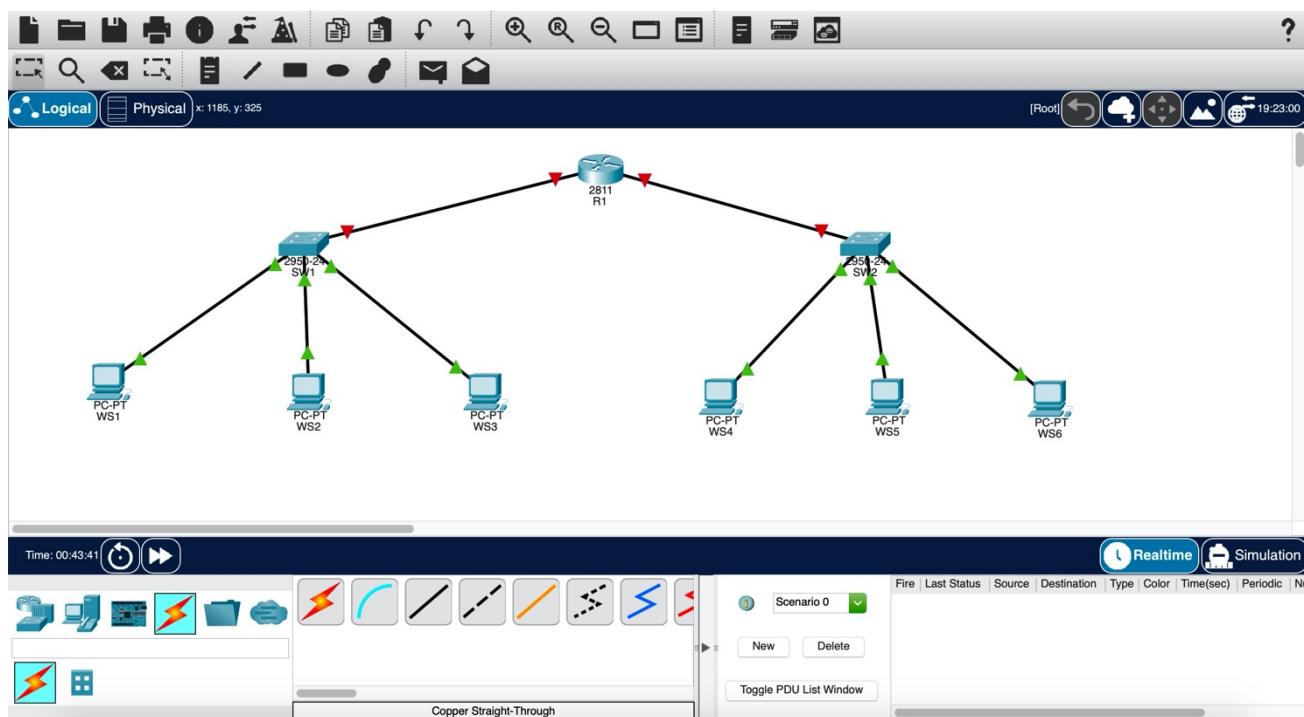
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4.6 Adding a router

- 1) Select the Routers Icon. Then select the 2811 router as detailed in the figure below.
- 2) Drag and drop the router onto the workspace and change the hostname and display name to R1



- 3) Connect FastEthernet0/0 on the *router* to FastEthernet0/24 on *SW1* using the CST.
- 4) Connect FastEthernet0/1 on the *router* to FastEthernet0/24 on *SW2* using the CST.



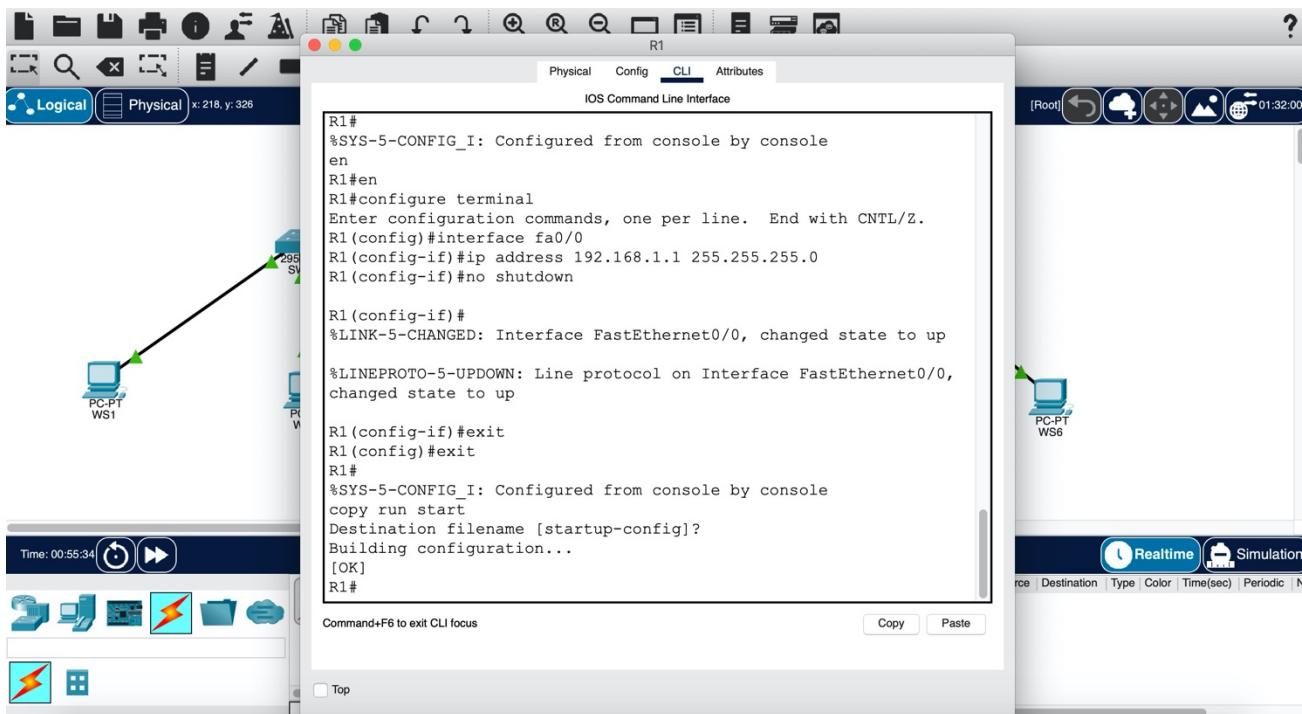
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- 6) Ping the R1 interface from WS1. *Ping 192.168.1.1* from WS1.
- 7) Ping the R1 interface from WS4. *Ping 192.168.2.1* from WS4.

What is the response?

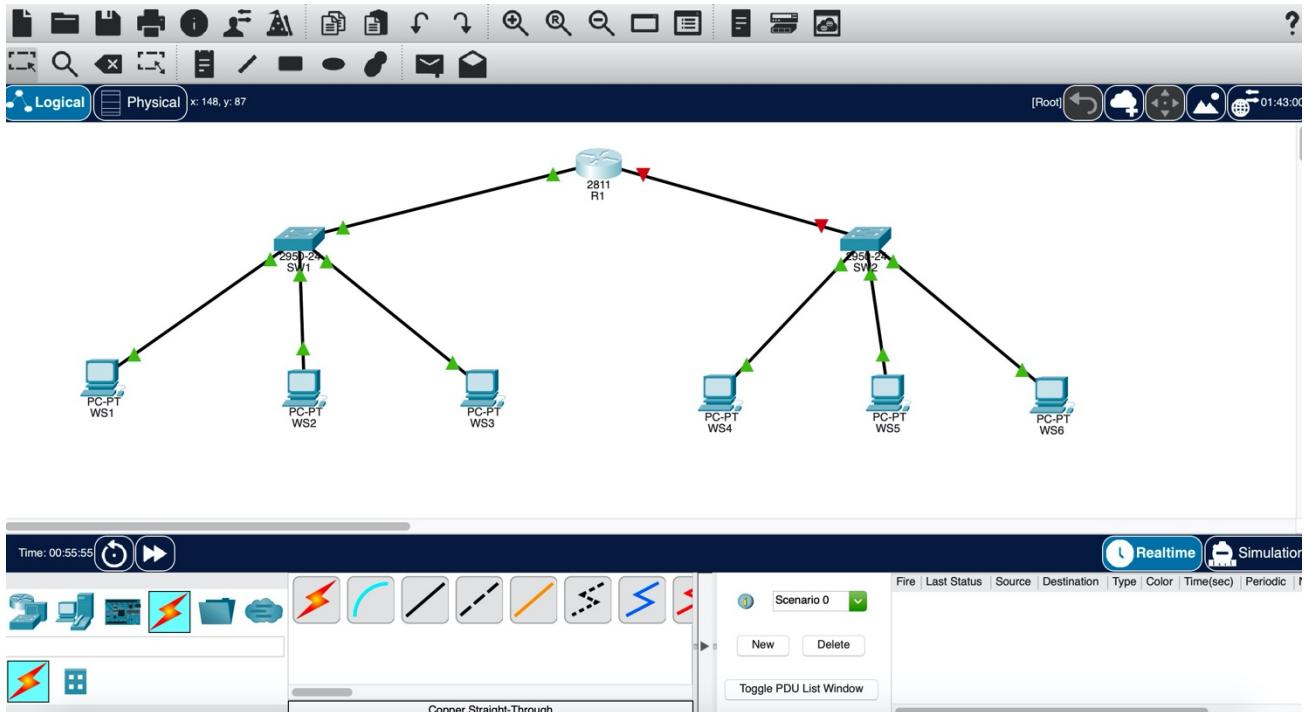
- 8) Click R1, Select Command Line Interface (CLI) tab.
- 9) Cancel the configuration.
- 10) At the prompt R1> Enter *en*
- 11) Enter *configure terminal* or *conf t <allows configuration>*
- 12) Enter *interface fa0/0*
- 13) Enter *ip address 192.168.1.1 255.255.255.0*
- 14) Enter *no shutdown*
- 15) Press enter
- 16) Enter *exit*
- 17) Enter *exit*
- 18) Enter *copy run start*

Your CLI should look like it does in the figure below:

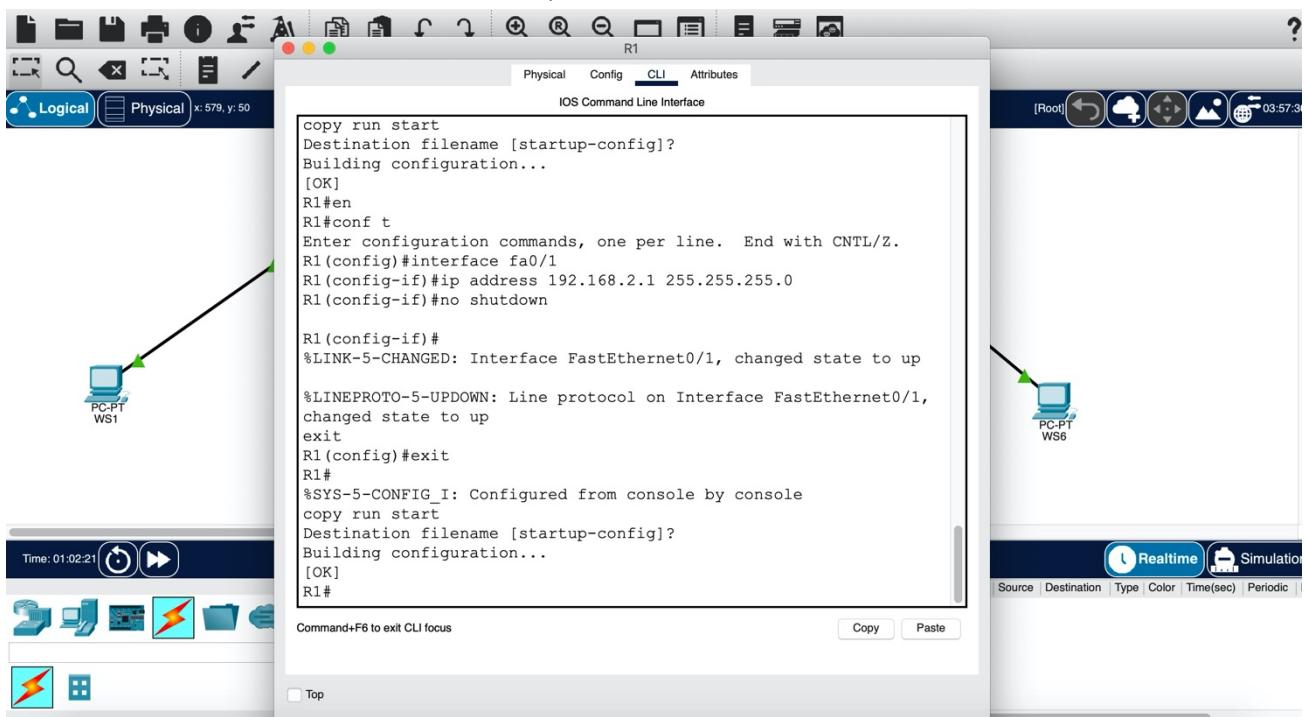


- 19) Check the status of the connection on the router. It should now show green.

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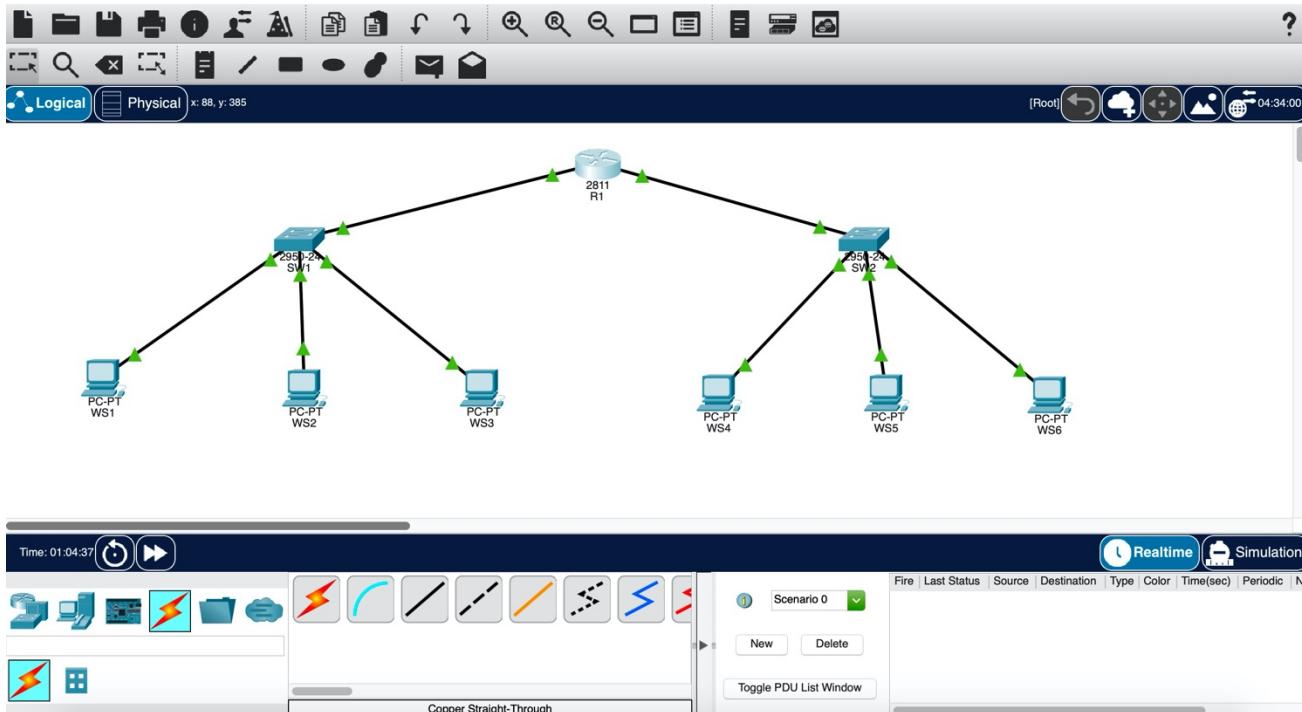


- 20) Follow the same steps to configure the second interface connecting to the 192.168.2.0 network. This time the interface is fa0/1.



Now the connection from the router to the 192.168.2.0 network should also show green.

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- 21) From WS1 ping the router (R1) interface 192.168.1.1
- 22) From WS4 ping the router (R1) interface 192.168.2.1
- 23) From WS1 ping WS4
- 24) From WS2 ping WS4
- 25) From WS6 ping WS3

What are the responses?

- 26) Do a *show ip route* on R1. What do you see?

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