

Primero lo que tenemos que hacer es abrir la aplicación de cisco packet tracer. le damos a nuevo proyecto, por primer paso ponemos los switches que están abajo en la parte izquierda es el que está coloreado colocamos en nuestro caso tenemos que poner 3 de ellos

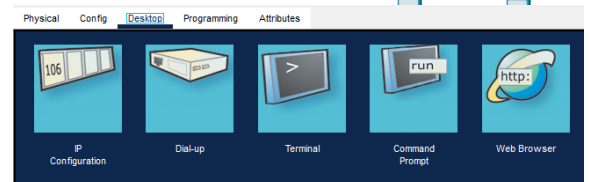


y después tenemos que hacer es ir colocando a los 6 primeros ordenadores para poder simularlo, y seleccionamos y arrastramos los pc's y los ponemos de esta manera

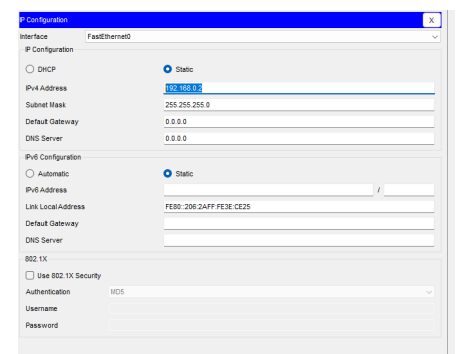


Después tendríamos que ir conectando cada PC al switch. que se vería tal que así Disponemos de un cableado de cobre straight que recorre del PC al switch y después se dispone otro cableado de cobre cross over entre los 3 switches.

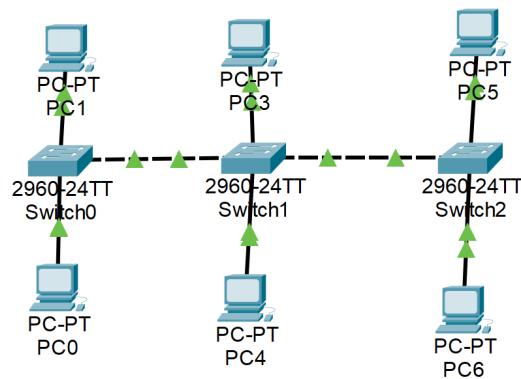
Para asignar dicha IP tenemos que ir por cada 1 hacemos click izquierdo en cada PC, y se nos abre un menú y tenemos que darle a la opción Desktop y le damos click izquierdo a ip configuration después en como nos dice en el ejercicio tenemos que poner la ip 192.168.0.2 para cada PC pero cambiando el ultimo número y ya si le das al enter se autorellena. Tal y como muestro en la imagen,



Después nos indica el ejercicio para ver si se hizo correctamente tenemos que asignarle un ping a cada ordenador para ver si se recibe dichos paquetes y se puede enviar los paquetes a otro ordenador.



Después al tener todos los PC's conectados cogemos de algún PC cogemos la consola e intentamos hacer ping por ejemplo lo que hice fue coger el PC0 y con la IP de los otros ordenadores ejecutamos el comando ping 192.168.0.? y dónde está la interrogación poner dicho número asignado a cada PC y así con cada Pc pones su IP correspondiente y si esta bien hecho te tiene que salir que se han enviado 4 paquetes y se recibe 4 paquetes como vemos en la imagen



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Cisco Packet Tracer PC Command Line 1.0
C:\>ping 192.168.0.2

Pinging 192.168.0.2 with 32 bytes of data:

Reply from 192.168.0.2: bytes=32 time=2ms TTL=128
Reply from 192.168.0.2: bytes=32 time=3ms TTL=128
Reply from 192.168.0.2: bytes=32 time=4ms TTL=128
Reply from 192.168.0.2: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.0.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 4ms, Average = 2ms

C:\>|
  
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C:\>ping 192.168.0.3

Pinging 192.168.0.3 with 32 bytes of data:

Reply from 192.168.0.3: bytes=32 time<1ms TTL=128
Reply from 192.168.0.3: bytes=32 time<1ms TTL=128
Reply from 192.168.0.3: bytes=32 time<1ms TTL=128
Reply from 192.168.0.3: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.0.3:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>ping 192.168.0.4

Pinging 192.168.0.4 with 32 bytes of data:

Reply from 192.168.0.4: bytes=32 time=15ms TTL=128
Reply from 192.168.0.4: bytes=32 time<1ms TTL=128
Reply from 192.168.0.4: bytes=32 time<1ms TTL=128
Reply from 192.168.0.4: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.0.4:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 15ms, Average = 3ms

C:\>ping 192.168.0.5

Pinging 192.168.0.5 with 32 bytes of data:

Reply from 192.168.0.5: bytes=32 time<1ms TTL=128
Reply from 192.168.0.5: bytes=32 time<1ms TTL=128
Reply from 192.168.0.5: bytes=32 time<1ms TTL=128
Reply from 192.168.0.5: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.0.5:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms
  
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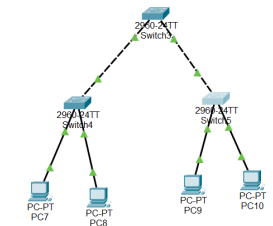
C:\>ping 192.168.0.6

Pinging 192.168.0.6 with 32 bytes of data:

Reply from 192.168.0.6: bytes=32 time=1ms TTL=128
Reply from 192.168.0.6: bytes=32 time<1ms TTL=128
Reply from 192.168.0.6: bytes=32 time<1ms TTL=128
Reply from 192.168.0.6: bytes=32 time=2ms TTL=128

Ping statistics for 192.168.0.6:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 2ms, Average = 0ms
  
```

Ahora introducimos la otra topología que es la de árbol que es tal que así y ahora lo que tenemos que hacer es seguir haciendo lo mismo que el paso anterior hacemos ping por ejemplo del PC7 al PC10 le inserto la imagen para que lo verifique



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C:\> ping 192.168.0.4

Pinging 192.168.0.4 with 32 bytes of data:

Reply from 192.168.0.4: bytes=32 time<1ms TTL=128
Reply from 192.168.0.4: bytes=32 time<1ms TTL=128
Reply from 192.168.0.4: bytes=32 time<1ms TTL=128
Reply from 192.168.0.4: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.0.4:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms
```

```
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 192.168.0.2

Pinging 192.168.0.2 with 32 bytes of data:

Reply from 192.168.0.2: bytes=32 time<1ms TTL=128
Reply from 192.168.0.2: bytes=32 time<1ms TTL=128
Reply from 192.168.0.2: bytes=32 time<1ms TTL=128
Reply from 192.168.0.2: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.0.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

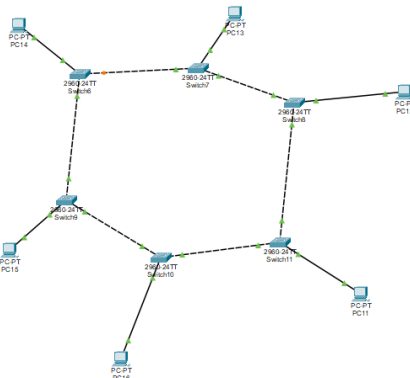
C:\>ping 192.168.0.3

Pinging 192.168.0.3 with 32 bytes of data:

Reply from 192.168.0.3: bytes=32 time<1ms TTL=128
Reply from 192.168.0.3: bytes=32 time<1ms TTL=128
Reply from 192.168.0.3: bytes=32 time<1ms TTL=128
Reply from 192.168.0.3: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.0.3:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms
```

Ahora vamos con la otra topología



Haremos un ping del PC11 al PC16 y lo hacemos igual que los anteriores haciendo el ping

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Cisco Packet Tracer PC Command Line 1.0
C:\>ping 192.168.0.6

Pinging 192.168.0.6 with 32 bytes of data:

Reply from 192.168.0.6: bytes=32 time<1ms TTL=128
Reply from 192.168.0.6: bytes=32 time=19ms TTL=128
Reply from 192.168.0.6: bytes=32 time=14ms TTL=128
Reply from 192.168.0.6: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.0.6:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 19ms, Average = 8ms
```

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Pinging 192.168.0.5 with 32 bytes of data:

Reply from 192.168.0.5: bytes=32 time<1ms TTL=128
Reply from 192.168.0.5: bytes=32 time<1ms TTL=128
Reply from 192.168.0.5: bytes=32 time<1ms TTL=128
Reply from 192.168.0.5: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.0.5:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms
```

```
Cisco Packet Tracer PC Command Line 1.0
C:\>ping 192.168.0.2

Pinging 192.168.0.2 with 32 bytes of data:

Reply from 192.168.0.2: bytes=32 time<1ms TTL=128
Reply from 192.168.0.2: bytes=32 time<1ms TTL=128
Reply from 192.168.0.2: bytes=32 time<1ms TTL=128
Reply from 192.168.0.2: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.0.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>ping 192.168.0.3

Pinging 192.168.0.3 with 32 bytes of data:

Reply from 192.168.0.3: bytes=32 time<1ms TTL=128
Reply from 192.168.0.3: bytes=32 time<1ms TTL=128
Reply from 192.168.0.3: bytes=32 time<1ms TTL=128
Reply from 192.168.0.3: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.0.3:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

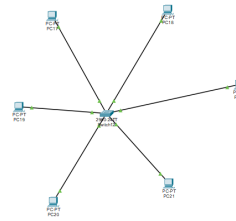
C:\>ping 192.168.0.4

Pinging 192.168.0.4 with 32 bytes of data:

Reply from 192.168.0.4: bytes=32 time<1ms TTL=128
Reply from 192.168.0.4: bytes=32 time<1ms TTL=128
Reply from 192.168.0.4: bytes=32 time=8ms TTL=128
Reply from 192.168.0.4: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.0.4:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 8ms, Average = 2ms
```

Y ya por último hacemos la última topología y volvemos a hacer lo mismo asignar las IPs a cada uno de los PCs y así poder hacer el ping de un ordenador a otro  
ahora haré ping desde el PC19 al PC21 por ejemplo



```

Cisco Packet Tracer PC Command Line 1.0
C:\>ping 192.168.0.5

Pinging 192.168.0.5 with 32 bytes of data:

Reply from 192.168.0.5: bytes=32 time<1ms TTL=128
Reply from 192.168.0.5: bytes=32 time<1ms TTL=128
Reply from 192.168.0.5: bytes=32 time<1ms TTL=128
Reply from 192.168.0.5: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.0.5:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms
  
```

```

Cisco Packet Tracer PC Command Line 1.0
C:\>ping 192.168.0.2

Pinging 192.168.0.2 with 32 bytes of data:

Reply from 192.168.0.2: bytes=32 time<1ms TTL=128
Reply from 192.168.0.2: bytes=32 time<1ms TTL=128
Reply from 192.168.0.2: bytes=32 time<1ms TTL=128
Reply from 192.168.0.2: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.0.2:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>ping 192.168.0.3

Pinging 192.168.0.3 with 32 bytes of data:

Reply from 192.168.0.3: bytes=32 time<1ms TTL=128
Reply from 192.168.0.3: bytes=32 time<1ms TTL=128
Reply from 192.168.0.3: bytes=32 time=12ms TTL=128
Reply from 192.168.0.3: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.0.3:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 12ms, Average = 3ms
  
```

```

C:\>ping 192.168.0.4

Pinging 192.168.0.4 with 32 bytes of data:

Reply from 192.168.0.4: bytes=32 time<1ms TTL=128
Reply from 192.168.0.4: bytes=32 time<1ms TTL=128
Reply from 192.168.0.4: bytes=32 time<1ms TTL=128
Reply from 192.168.0.4: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.0.4:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>ping 192.168.0.5

Pinging 192.168.0.5 with 32 bytes of data:

Reply from 192.168.0.5: bytes=32 time<1ms TTL=128
Reply from 192.168.0.5: bytes=32 time<1ms TTL=128
Reply from 192.168.0.5: bytes=32 time<1ms TTL=128
Reply from 192.168.0.5: bytes=32 time<1ms TTL=128

Ping statistics for 192.168.0.5:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms

C:\>ping 192.168.0.6

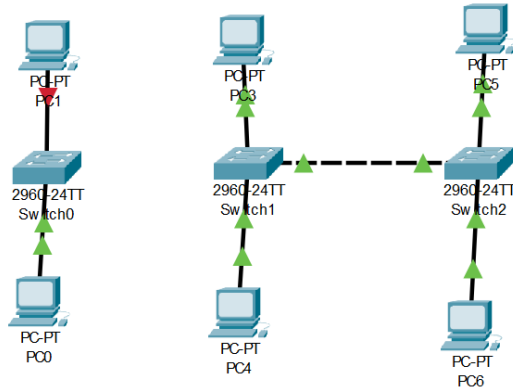
Pinging 192.168.0.6 with 32 bytes of data:

Reply from 192.168.0.6: bytes=32 time<1ms TTL=128
Reply from 192.168.0.6: bytes=32 time<1ms TTL=128
Reply from 192.168.0.6: bytes=32 time<1ms TTL=128
Reply from 192.168.0.6: bytes=32 time<1ms TTL=128

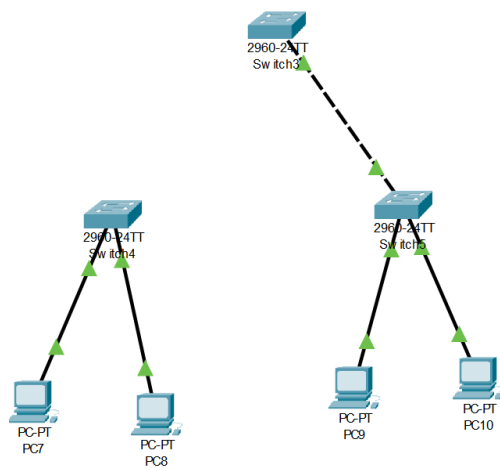
Ping statistics for 192.168.0.6:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms
  
```

Y por último si cortamos los cables

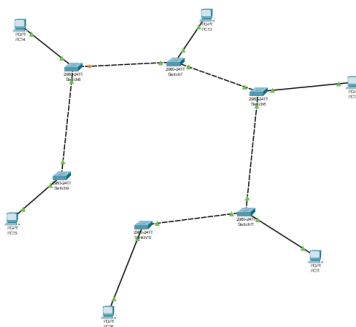
En esta topología cuando cortamos el cable central hace que deje de tener conexión hasta el lugar del corte del cable



En la siguiente Topología si cortamos el cable del switch de la izquierda con el “central” no se corta la conexión solo se pierde esa ramificación.



Siguiente topología si cortamos el cable de abajo lo que sucede es que deja de haber conexión en todos



La última topología si cortamos el cable de arriba izquierda solo dejaría de funcionar el PC al que hemos quitado el cable y todos los demás si seguirán funcionando

