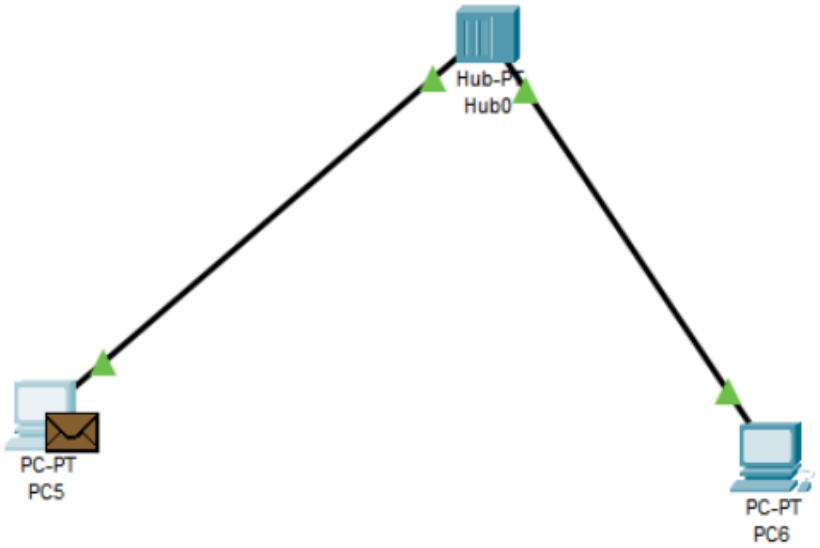
实验1：以太网组网实验

- 姓名：卢麒萱
- 学号：2010519

仿真环境下的共享式以太网组网

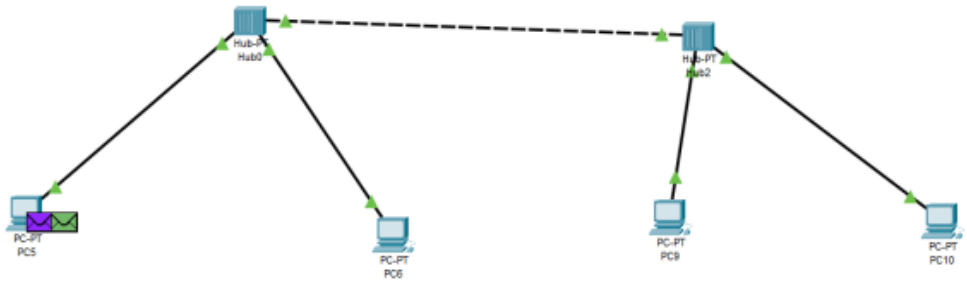
单集线器共享式以太网组网



测试PC5到PC6的连通性：

```
C:\>ping 192.168.0.12

Pinging 192.168.0.12 with 32 bytes of data:

Request timed out.
Reply from 192.168.0.12: bytes=32 time=8ms TTL=128
Reply from 192.168.0.12: bytes=32 time=4ms TTL=128
Reply from 192.168.0.12: bytes=32 time=4ms TTL=128

Ping statistics for 192.168.0.12:
    Packets: Sent = 4, Received = 3, Lost = 1 (25% loss),
Approximate round trip times in milli-seconds:
    Minimum = 4ms, Maximum = 8ms, Average = 5ms
```

多集线器共享式以太网组网



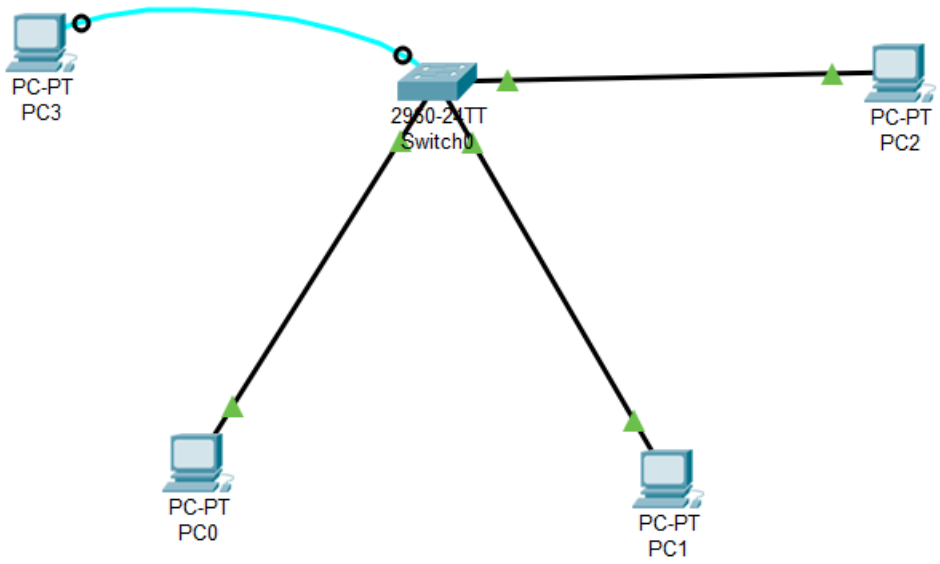
测试PC5到PC9的连通性：

```
C:\>ping 192.168.0.13

Pinging 192.168.0.13 with 32 bytes of data:

Reply from 192.168.0.13: bytes=32 time=12ms TTL=128
```

交换式以太网组网和VLAN配置

单交换机以太网组网&划分VLAN

将PC0和PC1划分为VLAN1，PC2划分为VLAN2。



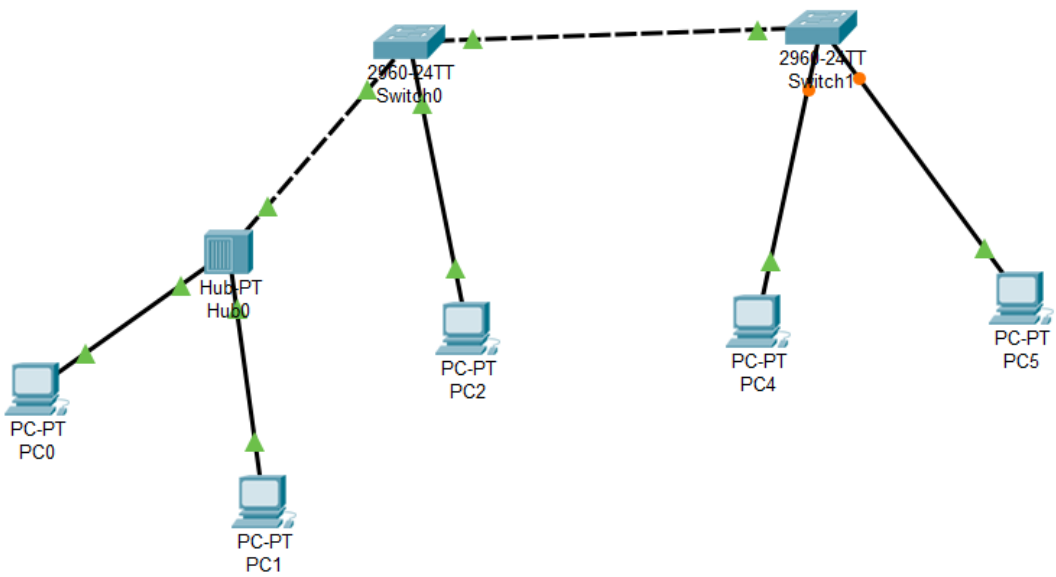
从PC0测试到PC1和PC2的连通性：

```
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:

Request timed out.
Request timed out.
Request timed out.
Request timed out.

Ping statistics for 192.168.0.3:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
```

可见可以ping通PC1，而不可通PC2。

多集线器、多交换机混合式网络&划分跨越交换机的VLAN

将PC0、PC1、PC4划分为VLAN1，PC2、PC5划分为VLAN2。



从PC0测试到PC1、PC2、PC4、PC5的连通性：

```
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 = 1ms, Average = 0ms

C:\>ping 192.168.0.3

Pinging 192.168.0.3 with 32 bytes of data:

Request timed out.
Request timed out.
Request timed out.
Request timed out.

Ping statistics for 192.168.0.3:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
```

```
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:

Request timed out.
Request timed out.
Request timed out.
Request timed out.

Ping statistics for 192.168.0.5:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
```

可见可以ping通PC1、PC4，而不可ping通PC2、PC5，说明同一VLAN下的主机互通，而不同VLAN下及时连接统一交换机也不可通。