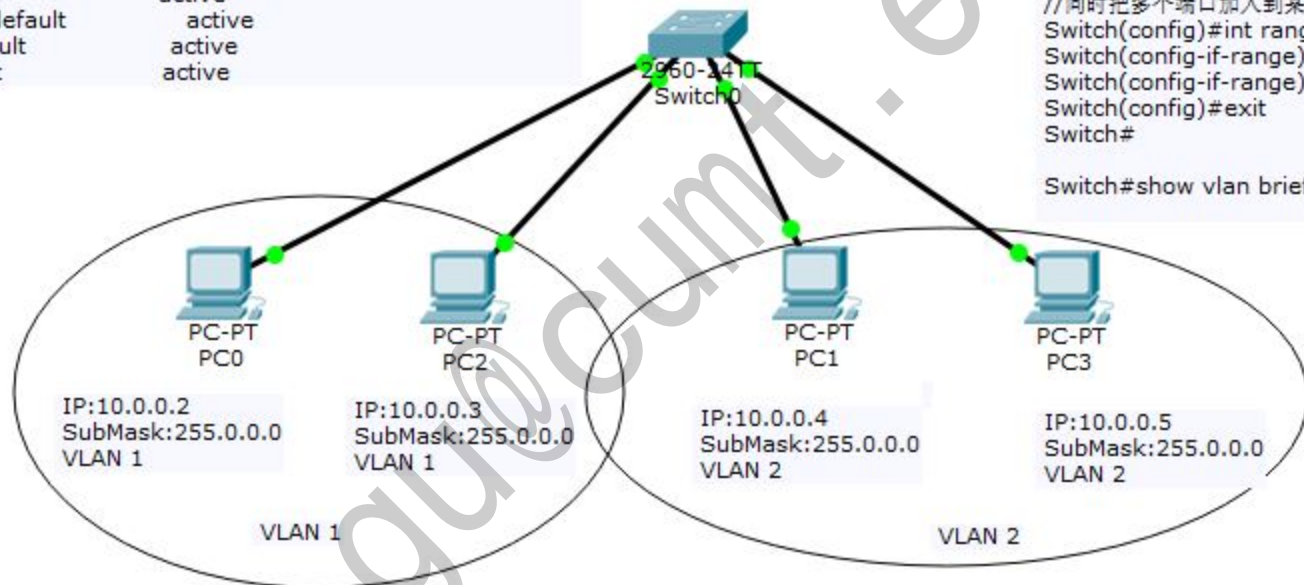


VLAN Name	Status	Ports
1 default	active	Fa0/1, Fa0/2, Fa0/11, Fa0/12 Fa0/13, Fa0/14, Fa0/15, Fa0/16 Fa0/17, Fa0/18, Fa0/19, Fa0/20 Fa0/21, Fa0/22, Fa0/23, Fa0/24 Gig0/1, Gig0/2
2 VLAN0002	active	Fa0/3, Fa0/4
3 VLAN0003	active	Fa0/5, Fa0/6, Fa0/7, Fa0/8 Fa0/9, Fa0/10
1002 fddi-default	active	
1003 token-ring-default	active	
1004 fddinet-default	active	
1005 trnet-default	active	

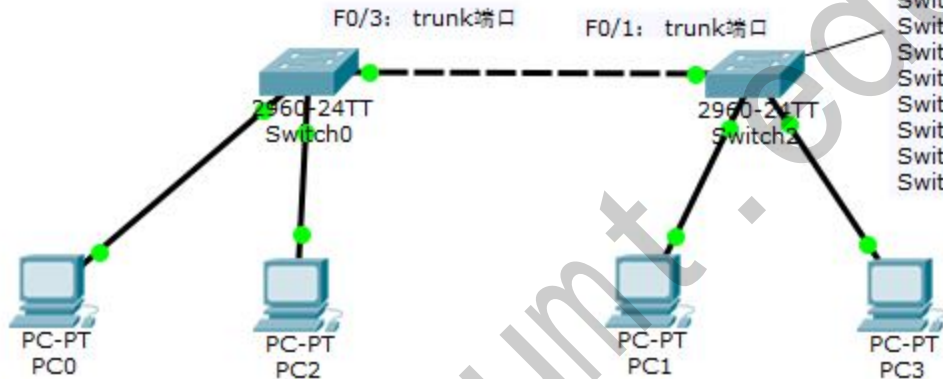


```

Switch#confi
Configuring from terminal, memory, or network [terminal]? t
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#vlan 2
Switch(config-vlan)#exit
Switch(config)#inter F0/3
Switch(config-if)#switchport access vlan 2
Switch(config-if)#exit
Switch(config)#inter f0/4
Switch(config-if)#switchport access vlan 2
Switch(config-if)#exit
Switch(config)#vlan 3
Switch(config-vlan)#exit
//同时把多个端口加入到某个vlan
Switch(config)#int range f0/5-10
Switch(config-if-range)#swi acc vlan 3
Switch(config-if-range)#exit
Switch(config)#exit
Switch#

```

```
Switch#show vlan brief
```



```
Switch#conf t
Switch(config)#vlan 2
Switch(config-vlan)#exit
Switch(config)#inter F0/3
Switch(config-if)#switchport access vlan 2
Switch(config-if)#exit
Switch(config)#int f0/1
Switch(config-if)#switchport mode trunk
Switch(config-if)#end
```



3560-24PS  
Multilayer Switch0

IP:192.168.1.1  
Mask:255.255.255.0

三层交换机端口默认为二层口，  
如果需要启用三层功能，  
就需要在此端口输入no switchport命令。

直通线

配置线



PC-PT  
PC0

IP:192.168.1.2  
Mask:255.255.255.0  
Gateway:192.168.1.1

通过Terminal  
对三层交换机  
进行配置

```
Switch>en
Switch#conf t
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#ip routing
Switch(config)#inter fa0/1
Switch(config-if)#no switchport
Switch(config-if)#
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1, changed state to down
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1, changed state to up
Switch(config-if)#ip address 192.168.1.1 255.255.255.0
Switch(config-if)#no shutdown
Switch(config-if)#end
Switch#
```

```

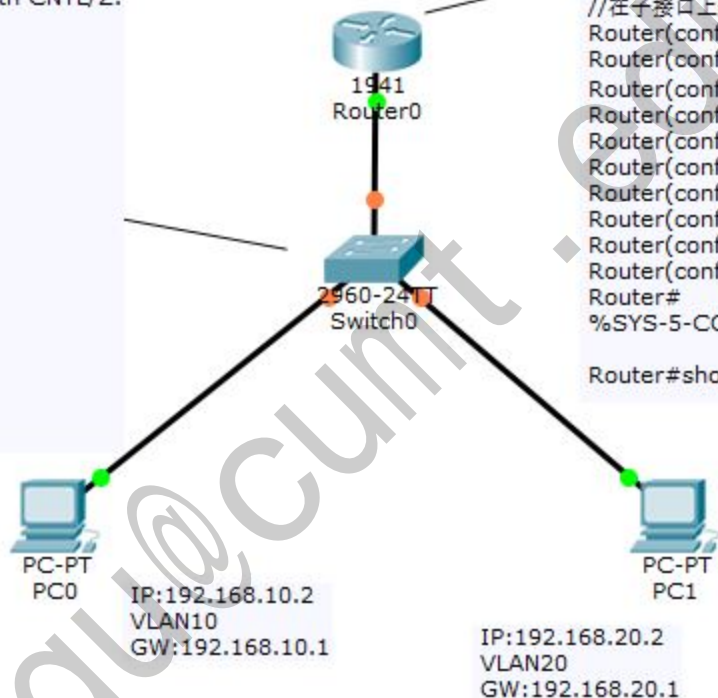
Switch>
Switch>enable
Switch#
Switch#config t
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#vlan 10
Switch(config-vlan)#vlan 20
Switch(config-vlan)#exit
Switch(config)#interface f0/1
Switch(config-if)#switchport mode access
Switch(config-if)#switchport access vlan 10
Switch(config-if)#exit
Switch(config)#int f0/2
Switch(config-if)#switchport mode access
Switch(config-if)#switchport access vlan 20
Switch(config-if)#exit
Switch(config)#int g0/3
Switch(config-if)#switchport mode trunk
Switch(config-if)#exit

Switch#show vlan brief

```

10	VLAN0010	active	Fa0/1
20	VLAN0020	active	Fa0/2
1002	fdi-default	active	
1003	token-ring-default	active	
1004	fddinet-default	active	
1005	trnet-default	active	

单臂路由连通不同VLAN



```

Router>
Router>enable
Router#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
//配置子接口，每个子接口的IP地址是每个VLAN的网关地址
Router(config)#inter g0/0.1
//在子接口上封装802.1Q协议
Router(config-subif)#encapsulation dot1q 10
Router(config-subif)#ip address 192.168.10.1 255.255.255.0
Router(config-subif)#no shutdown //激活
Router(config-subif)#int g0/0.2
Router(config-subif)#
Router(config-subif)#encapsulation dot1q 20
Router(config-subif)#ip address 192.168.20.1 255.255.255.0
Router(config-subif)#no shutdown
Router(config-subif)#
Router(config-subif)#end
Router#
%SYS-5-CONFIG_I: Configured from console by console

Router#show ip route

```

Gateway of last resort is not set

```

192.168.10.0/24 is variably subnetted, 2 subnets, 2 masks
C    192.168.10.0/24 is directly connected, GigabitEthernet0/0.1
L    192.168.10.1/32 is directly connected, GigabitEthernet0/0.1
192.168.20.0/24 is variably subnetted, 2 subnets, 2 masks
C    192.168.20.0/24 is directly connected, GigabitEthernet0/0.2
L    192.168.20.1/32 is directly connected, GigabitEthernet0/0.2

```



```

Switch>en
Switch#config t
Switch(config)#vlan 10
Switch(config-vlan)#vlan 20
Switch(config-vlan)#exit
Switch(config)#inter fa0/1
Switch(config-if)#swit mode access
Switch(config-if)#switchport access vlan 10
Switch(config-if)#exit
Switch(config)#inter fa0/2
Switch(config-if)#swit mode access
Switch(config-if)#switchport access vlan 20
Switch(config-if)#exit
Switch(config)#end
Switch#
Switch#show vlan brief

```

使用SVI实现VLAN间的通信

```

Switch(config)#inter vlan 10
Switch(config-if)#ip address 192.168.10.1 255.255.255.0
Switch(config-if)#no shut
Switch(config)#inter vlan 20
Switch(config-if)#ip address 192.168.20.1 255.255.255.0
Switch(config-if)#no shut
Switch(config-if)#exit
Switch(config)#ip routing//启动路由，非常重要的必须操作
Switch(config)#end
Switch#
%SYS-5-CONFIG_I: Configured from console by console

```

Switch#show ip route

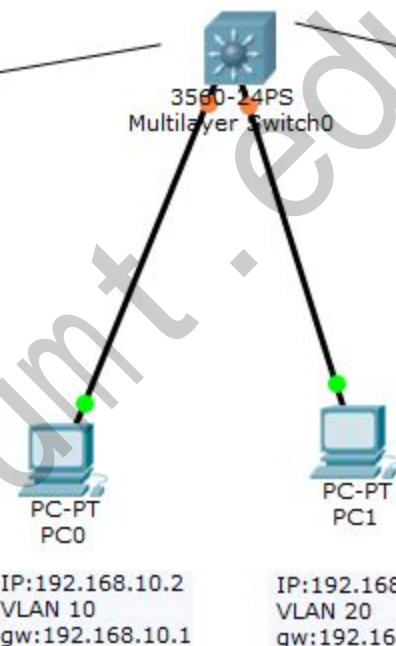
Gateway of last resort is not set

```

C 192.168.10.0/24 is directly connected, Vlan10
C 192.168.20.0/24 is directly connected, Vlan20

```

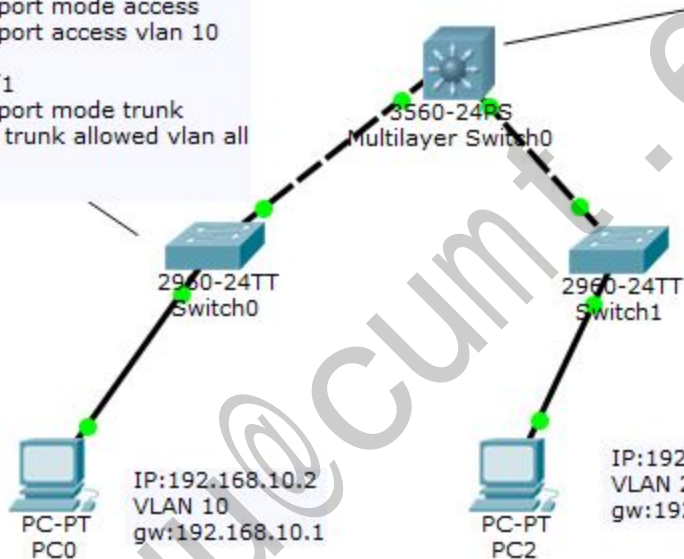
VLAN Name	Status	Ports
1 default	active	Fa0/3, Fa0/4, Fa0/5, Fa0/6 Fa0/7, Fa0/8, Fa0/9, Fa0/10 Fa0/11, Fa0/12, Fa0/13, Fa0/14 Fa0/15, Fa0/16, Fa0/17, Fa0/18 Fa0/19, Fa0/20, Fa0/21, Fa0/22 Fa0/23, Fa0/24, Gig0/1, Gig0/2
10 VLAN0010	active	Fa0/1
20 VLAN0020	active	Fa0/2
1002 fddi-default	active	
1003 token-ring-default	active	
1004 fddinet-default	active	
1005 trnet-default	active	



IP:192.168.10.2  
VLAN 10  
gw:192.168.10.1

IP:192.168.20.2  
VLAN 20  
gw:192.168.20.1

```
Switch>en
Switch#conf t
Switch(config)#vlan 10
Switch(config-vlan)#exit
Switch(config)#inter fa0/1
Switch(config-if)#switchport mode access
Switch(config-if)#switchport access vlan 10
Switch(config-if)#exit
Switch(config)#inter g0/1
Switch(config-if)#switchport mode trunk
Switch(config-if)#switch trunk allowed vlan all
Switch(config-if)#exit
```



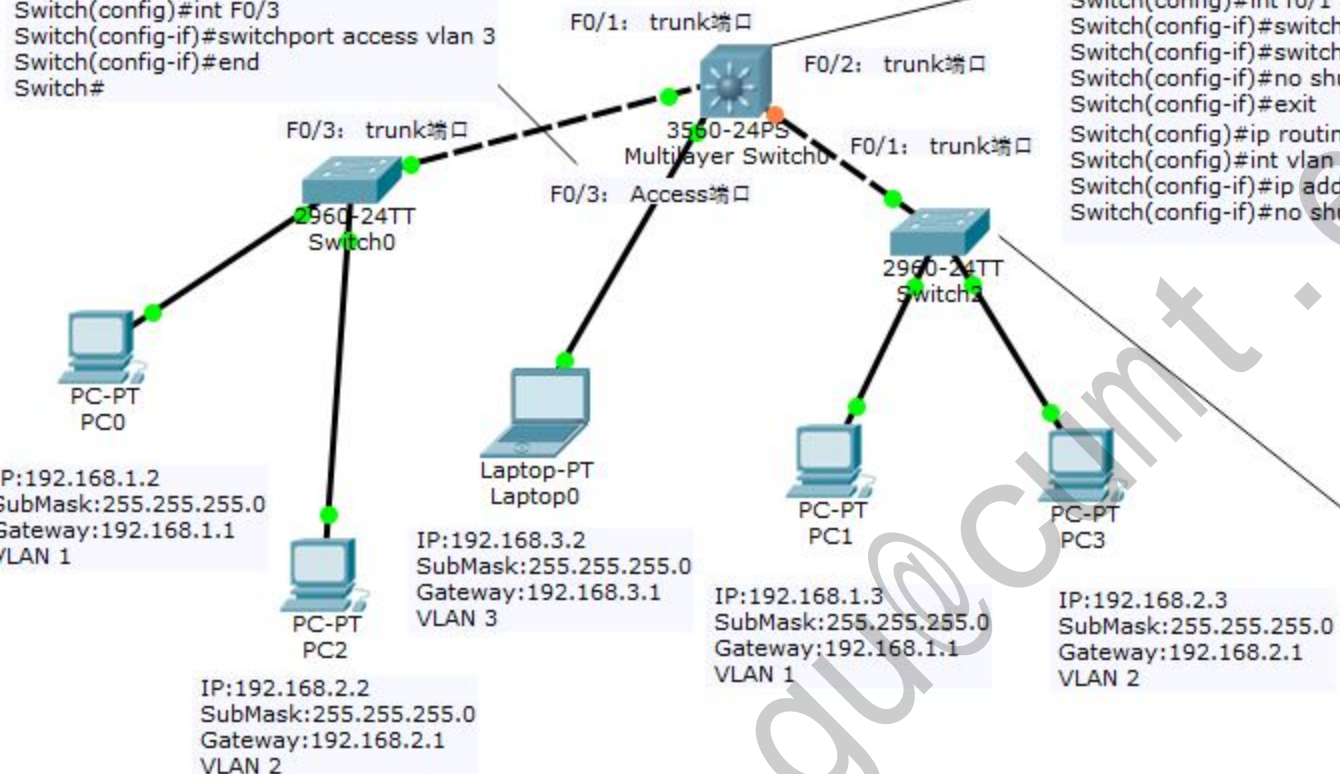
```
Switch>en
Switch#conf t
Switch(config)#inter g0/1
Switch(config-if)#switch mode trunk
Switch(config-if)#exit
```

```
Switch(config)#vlan 10
Switch(config-vlan)#vlan 20
Switch(config-vlan)#exit
```

```
Switch(config)#inter vlan 10
Switch(config-if)#ip address 192.168.10.1 255.255.255.0
Switch(config-if)#no shutdown
Switch(config)#inter vlan 20
Switch(config-if)#ip address 192.168.20.1 255.255.255.0
Switch(config-if)#no shut
Switch(config-if)#exit
```

```
Switch(config)#ip routing //启动路由转发
Switch(config)#exit
Switch#
Switch#show ip route
```

```
Switch#conf t
Switch(config)#vlan 3
Switch(config-vlan)#exit
Switch(config)#int F0/3
Switch(config-if)#switchport access vlan 3
Switch(config-if)#end
Switch#
```



```
Switch(config)#int f0/2
Switch(config-if)#switchport mode trunk
Switch(config-if)#switchport trunk allowed vlan all
Switch(config-if)#no shutdown //激活端口
Switch(config-if)#exit
Switch(config)#int f0/1
Switch(config-if)#switchport mode trunk
Switch(config-if)#switchport trunk allowed vlan all
Switch(config-if)#no shutdown
Switch(config-if)#exit
Switch(config)#ip routing //启动路由功能
Switch(config)#int vlan 1
Switch(config-if)#ip address 192.168.1.1 255.255.255.0
Switch(config-if)#no shutdown
```

```
Switch(config)#vlan 2
Switch(config-vlan)#exit
Switch(config-vlan)#exit
Switch(config)#int vlan 2
Switch(config-if)#ip address 192.168.2.1 255.255.255.0
Switch(config-if)#no shutdown
Switch(config-if)#exit
Switch(config)#vlan 3
Switch(config-vlan)#exit
Switch(config-vlan)#exit
Switch(config)#int vlan 3
Switch(config-if)#ip address 192.168.3.1 255.255.255.0
Switch(config-if)#no shutdown
Switch(config-if)#exit
Switch(config)#ip routing
Switch(config)#exit
Switch#
Switch#do show ip route
```

Gateway of last resort is not set

```
C 192.168.1.0/24 is directly connected, Vlan1
C 192.168.2.0/24 is directly connected, Vlan2
C 192.168.3.0/24 is directly connected, Vlan3
```

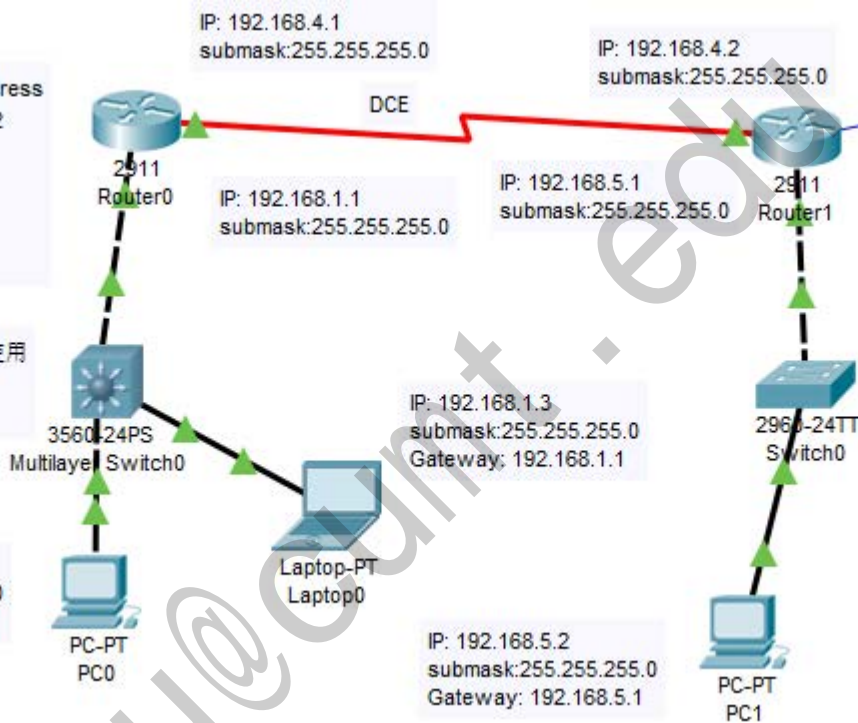
```
Switch#conf t
Switch(config)#vlan 2
Switch(config-vlan)#exit
Switch(config)#inter F0/3
Switch(config-if)#switchport access vlan 2
Switch(config-if)#exit
Switch(config)#int f0/1
Switch(config-if)#switchport mode trunk
Switch(config-if)#switchport trunk allowed vlan all
Switch(config-if)#exit
```



//如果是在界面中添加Network Address  
//一定要用命令将RIP的版本设置为2  
//以保持两个路由器的RIP一致  
Router(config)#router rip  
Router(config-router)#version 2  
Router(config-router)#end  
Router#

此拓扑下把三层交换机作为二层交换机使用  
不需要做任何配置就可以连通网络  
下一步完成三层交换机的跨VLAN实现

IP: 192.168.1.2  
submask:255.255.255.0  
Gateway: 192.168.1.1



Router>en  
Router#conf t

Router(config)#int G0/0  
Router(config-if)#ip add 192.168.5.1 255.255.255.0  
Router(config-if)#no sh //开启端口  
Router(config-if)#end  
Router#

Router#conf t  
Router(config)#int s0/3/0  
Router(config-if)#ip add 192.168.4.2 255.255.255.0  
Router(config-if)#clock rate 2000000  
Router(config-if)#no sh  
Router(config-if)#end

Router(config)#router rip  
Router(config-router)#network 192.168.5.0  
Router(config-router)#network 192.168.4.0  
Router(config-router)#version 2  
Router(config-router)#end



//重新设置R0的G0/0接口的IP和RIP路由

```
Router(config)#no router rip
```

```
Router(config)#end
```

```
Router#
```

```
Router#show ip route
```

```
Router#conf t
```

```
Router(config)#router rip
```

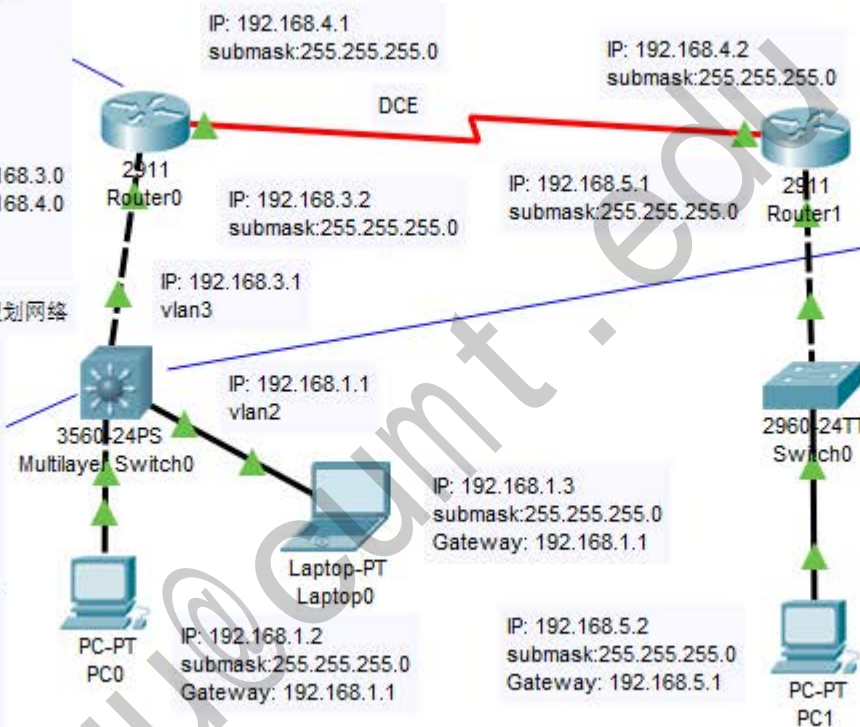
```
Router(config-router)#network 192.168.3.0
```

```
Router(config-router)#network 192.168.4.0
```

```
Router(config-router)#version 2
```

```
Router(config-router)#end
```

开启三层交换机的路由功能，重新规划网络



```
Switch#conf t
```

```
Switch(config)#int vlan 2
```

```
Switch(config-if)#ip add 192.168.1.1 255.255.255.0
```

```
Switch(config-if)#no sh
```

```
Switch(config-if)#end
```

```
Switch#
```

```
Switch#conf t
```

```
Switch(config)#int vlan 3
```

```
Switch(config-if)#ip add 192.168.3.1 255.255.255.0
```

```
Switch(config-if)#no sh
```

```
Switch(config-if)#end
```

```
Switch#
```

```
Switch#conf t
```

```
Enter configuration commands, one per line. End with CNTL/Z.
```

```
Switch(config)#ip routing
```

```
Switch(config)#router rip
```

```
Switch(config-router)#network 192.168.1.0
```

```
Switch(config-router)#network 192.168.3.0
```

```
Switch(config-router)#version 2
```

```
Switch(config-router)#end
```

```
Switch#show ip route
```

```
Switch#show running
```