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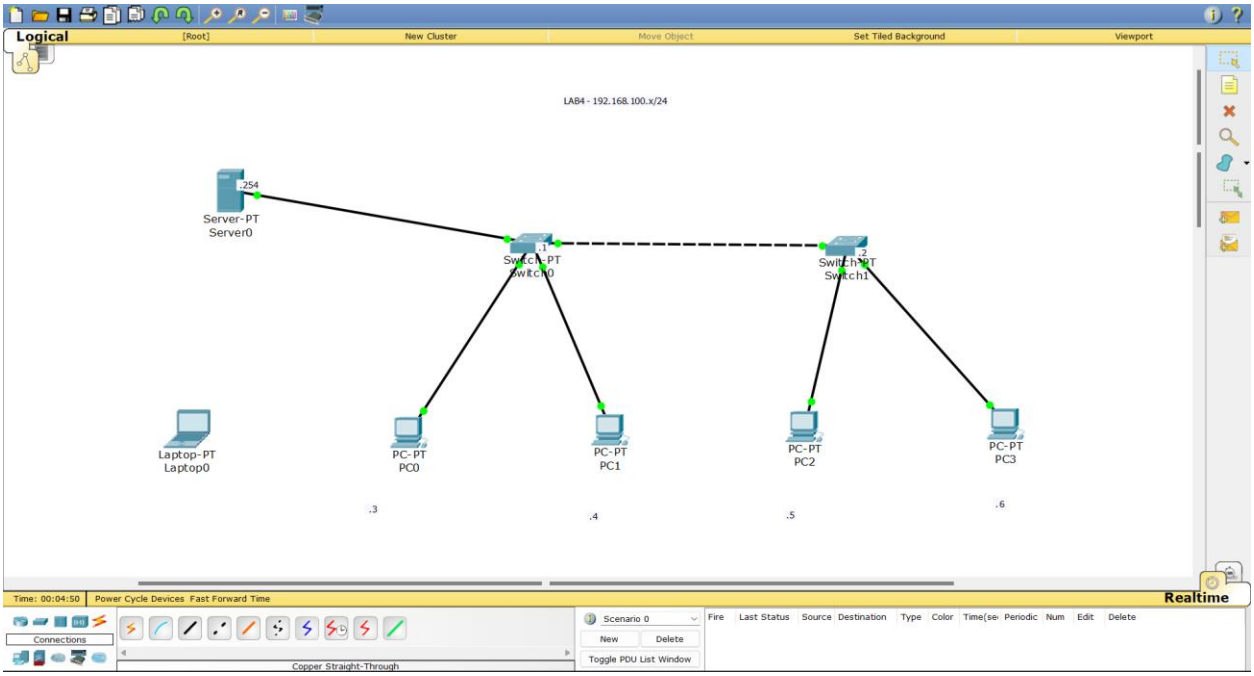
BÁO CÁO LAB4

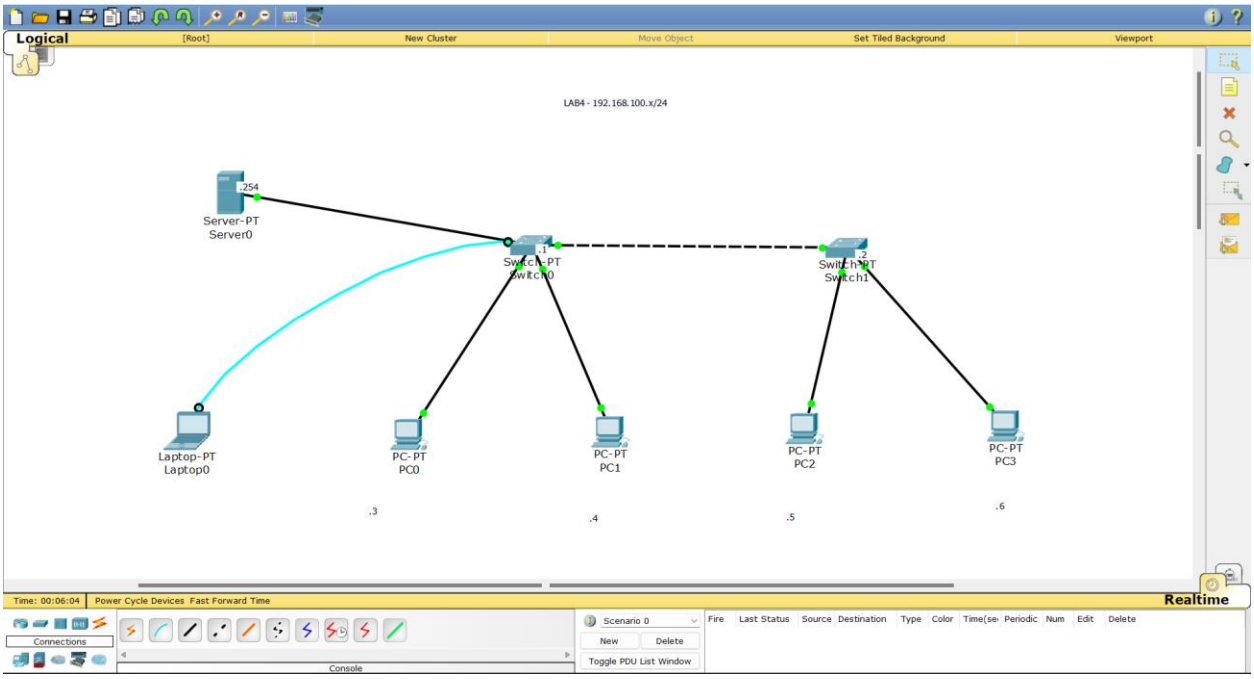
THỰC HÀNH NHẬP MÔN MẠNG MÁY TÍNH

Câu 1: Tạo topo mạng như hình vẽ



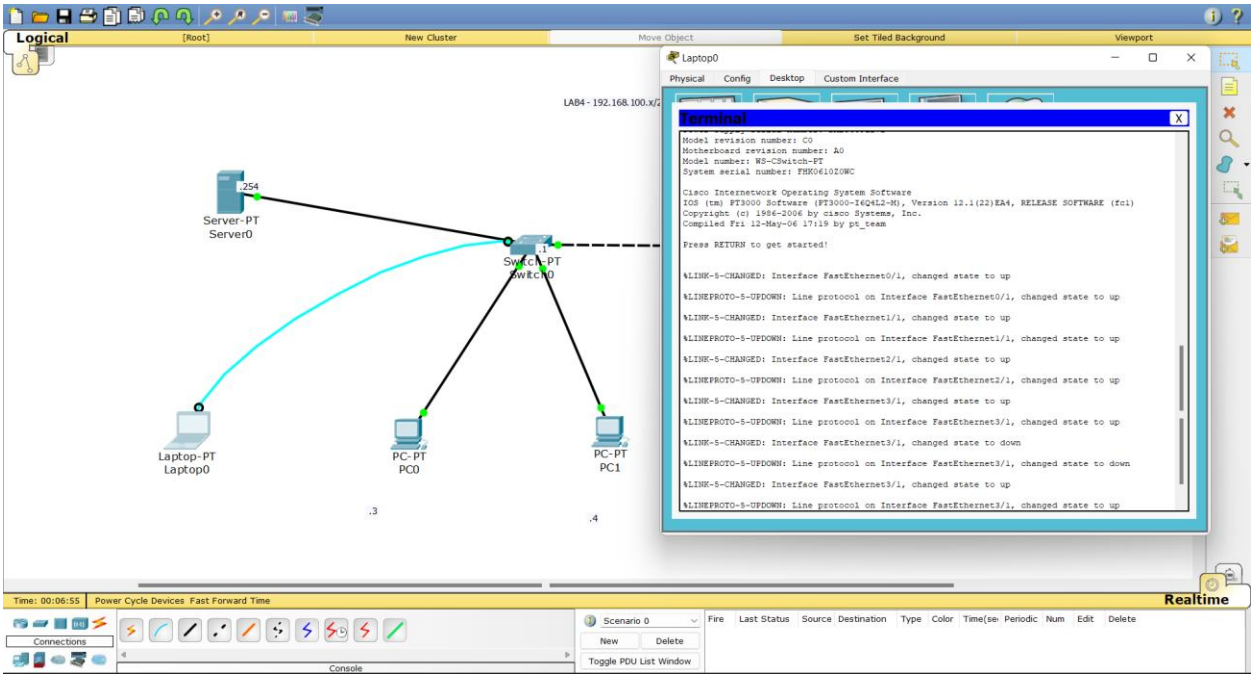
Tạo topo

Câu 2: Sử dụng máy Laptop kết nối bằng cáp console vào switch để giả lập quá trình sử dụng Hyper Terminal kết nối trên thiết bị thật (chỉ cần thực hiện trên 1 Switch), sau đó gỡ cáp console thay bằng cáp phù hợp để sử dụng khi kết nối vào Switch



Sử dụng máy Laptop kết nối bằng cáp console vào switch

Câu 3: Đổi tên các Switch lần lượt là lab4a và lab4b



Vào giao diện Switch

```
Switch>enable
Switch#
```

Chuyển từ giao diện người dùng sang giao diện đặc quyền

```
Switch#copy running-config startup-config
Destination filename [startup-config]?
Building configuration...
[OK]
```

Sao lưu lệnh cấu hình từ bộ nhớ ngoài vào bộ nhớ trong

```
Switch#confi
Switch#configure ter
Switch#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#
```

Chuyển từ giao diện đặc quyền vào giao diện cấu hình

```
Switch(config)#hostname lab4a
lab4a(config)#
```

Đổi tên switch0

Câu 4: Thiết lập mật khẩu console, enable, telnet cho các Switch, mật khẩu bắt buộc là 1

```
lab4a(config)#line console 0
lab4a(config-line)#pas
lab4a(config-line)#password 1
lab4a(config-line)#login
```

Thiết lập mật khẩu console

```
lab4a(config-line)#exit
lab4a(config)#
```

Trở về giao diện config

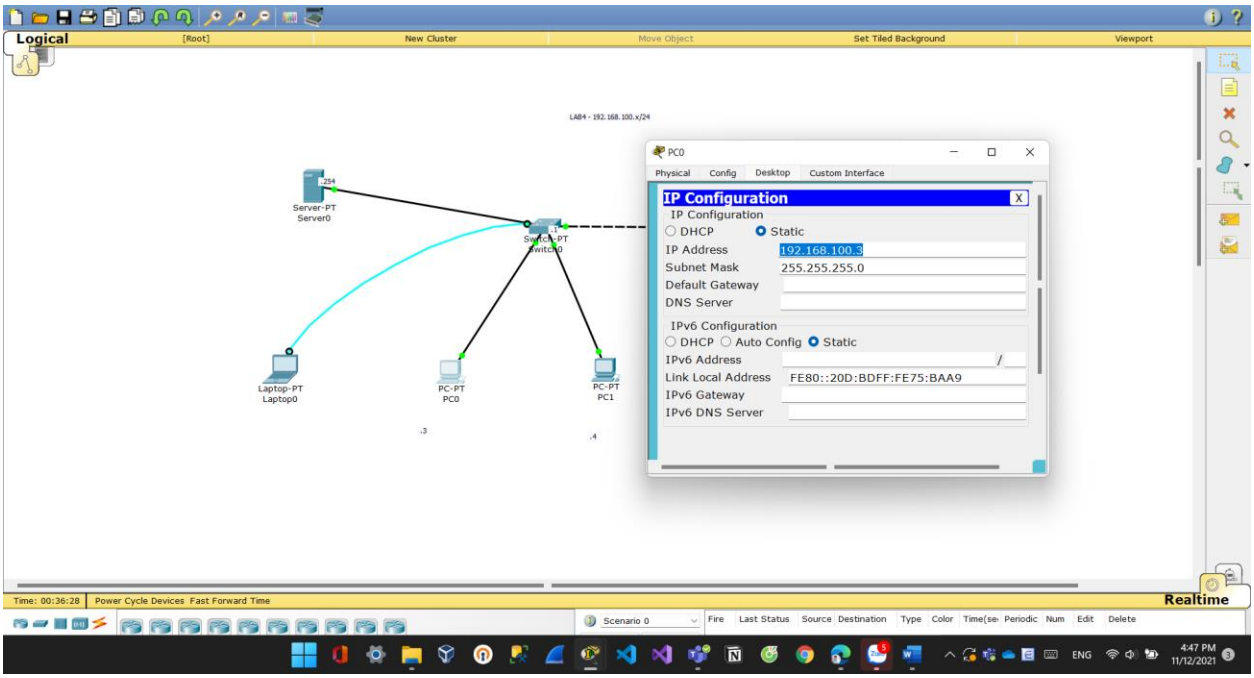
```
lab4a(config)#ena
lab4a(config)#enable se
lab4a(config)#enable secret 1
```

Thiết lập mật khẩu enable

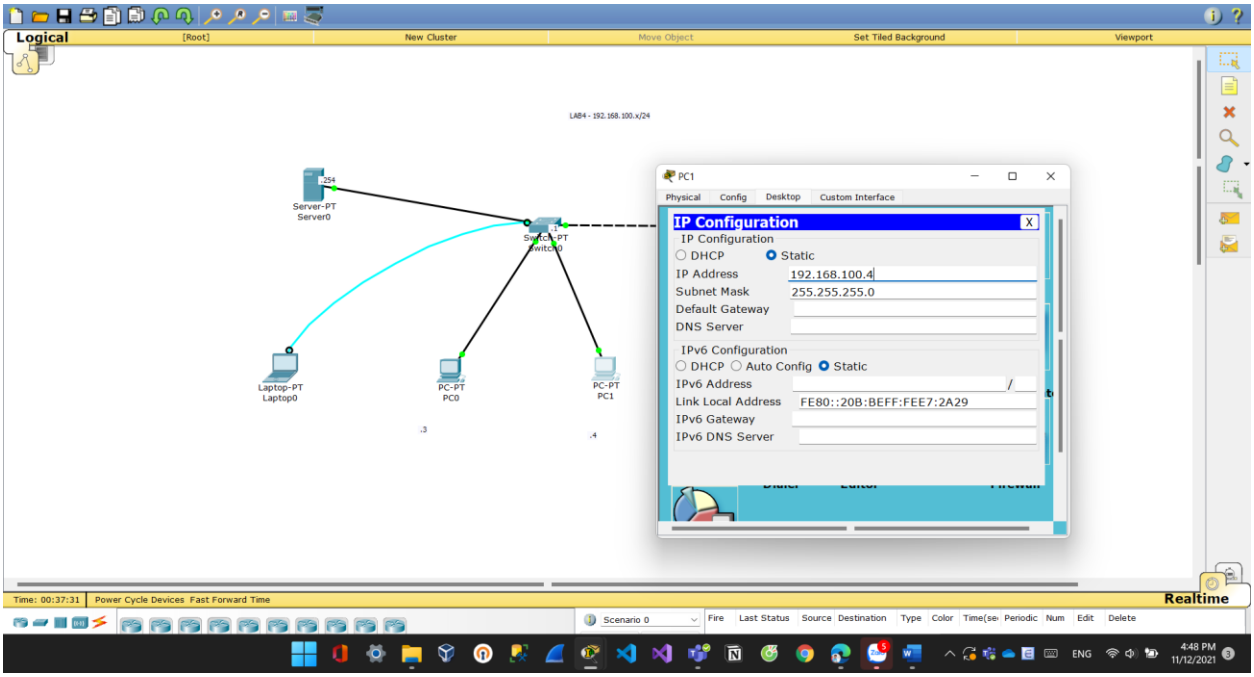
```
lab4a(config)#line vty 0 4
lab4a(config-line)#pas
lab4a(config-line)#password 1
lab4a(config-line)#login
```

Thiết lập mật khẩu telnet

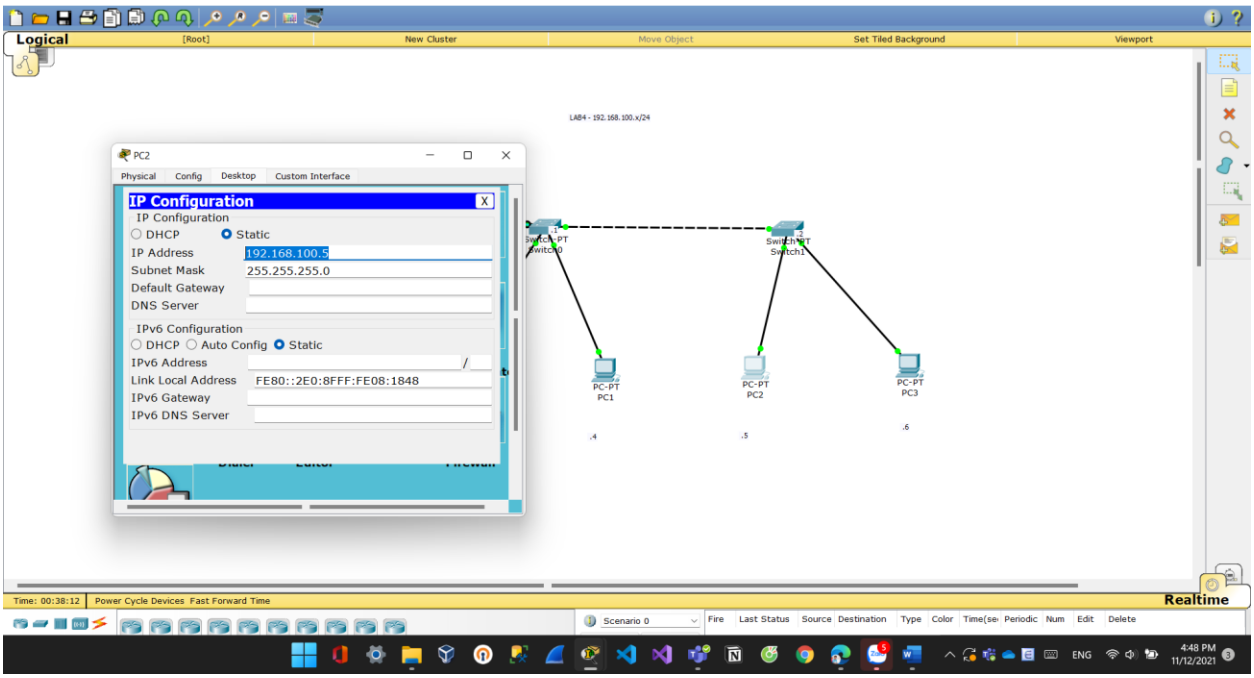
Câu 5: Thiết lập địa chỉ IP tĩnh cho các PC bằng lệnh ipconfig hoặc giao diện đồ hoạ



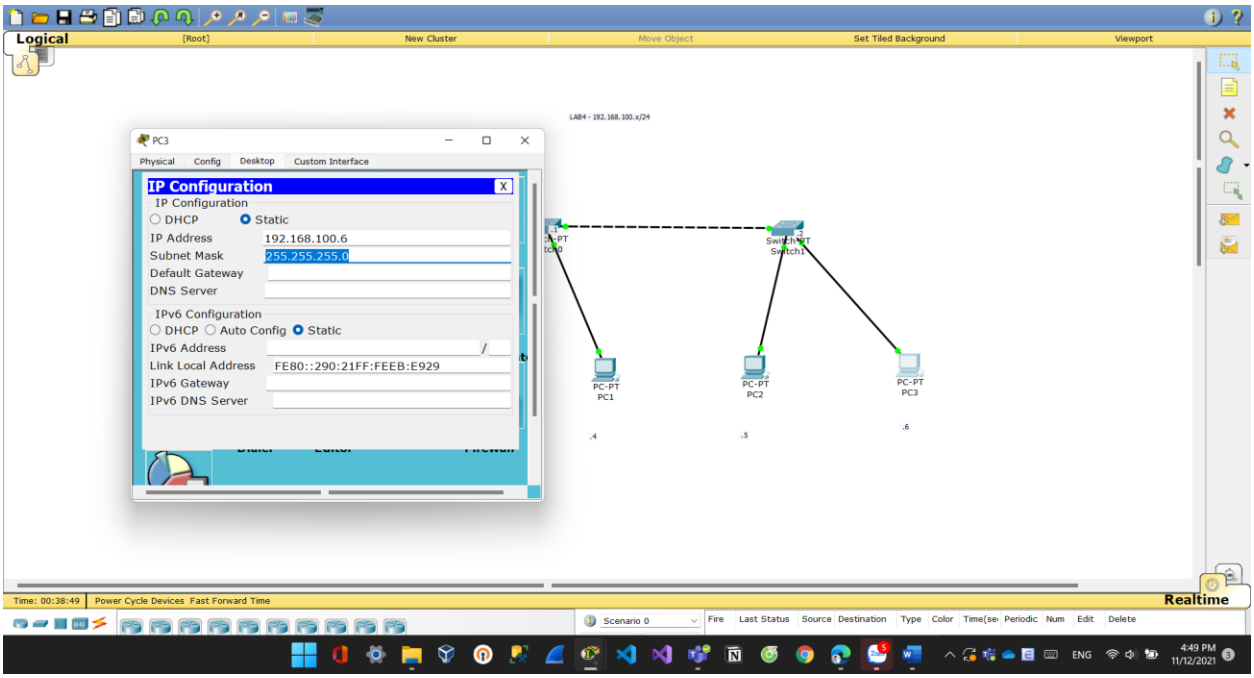
Thiết lập IP máy 0



Thiết lập IP máy 1



Thiết lập IP máy 2



Thiết lập IP máy 3

```
PC>ipconfig /all

FastEthernet0 Connection:(default port)

Connection-specific DNS Suffix..:
Physical Address.................: 000D.BD75.BAA9
Link-local IPv6 Address.........: FE80::20D:BDFF:FE75:BAA9
IP Address......................: 192.168.100.3
Subnet Mask.....................: 255.255.255.0
Default Gateway.................: 0.0.0.0
DNS Servers.....................: 0.0.0.0
DHCP Servers....................: 0.0.0.0
DHCPv6 Client DUID..............: 00-01-00-01-8D-D3-AD-DC-00-0D-BD-
75-BA-A9
```

Kiểm tra ip máy 0 trong Command Prompt

```
PC>ipconfig /all

FastEthernet0 Connection:(default port)
Connection-specific DNS Suffix..:
Physical Address.................: 000B.BEE7.2A29
Link-local IPv6 Address.........: FE80::20B:BEFF:FEE7:2A29
IP Address......................: 192.168.100.4
Subnet Mask.....................: 255.255.255.0
Default Gateway.................: 0.0.0.0
DNS Servers.....................: 0.0.0.0
DHCP Servers....................: 0.0.0.0
DHCPv6 Client DUID..............: 00-01-00-01-33-CC-05-09-00-0B-BE-
E7-2A-29
```

Kiểm tra ip máy 1 trong Command Prompt

```
PC>ipconfig /all

FastEthernet0 Connection:(default port)

Connection-specific DNS Suffix..:
Physical Address.................: 00E0.8F08.1848
Link-local IPv6 Address.........: FE80::2E0:8FFF:FE08:1848
IP Address......................: 192.168.100.5
Subnet Mask.....................: 255.255.255.0
Default Gateway.................: 0.0.0.0
DNS Servers.....................: 0.0.0.0
DHCP Servers....................: 0.0.0.0
DHCPv6 Client DUID..............: 00-01-00-01-36-95-31-73-00-E0-8F-
08-18-48
```

Kiểm tra ip máy 2 trong Command Promp

```
PC>ipconfig /all

FastEthernet0 Connection:(default port)

Connection-specific DNS Suffix..:
Physical Address.................: 0090.21EB.E929
Link-local IPv6 Address.........: FE80::290:21FF:FEEB:E929
IP Address.......................: 192.168.100.6
Subnet Mask.....................: 255.255.255.0
Default Gateway.................: 0.0.0.0
DNS Servers.....................: 0.0.0.0
DHCP Servers....................: 0.0.0.0
DHCPv6 Client DUID..............: 00-01-00-01-64-2D-55-5E-00-90-21-
EB-E9-29
```

Kiểm tra ip máy 3 trong Command Prompt

Câu 6: Kiểm tra kết nối giữa các PC bằng lệnh ping

```
PC>ping 192.168.100.4

Pinging 192.168.100.4 with 32 bytes of data:

Reply from 192.168.100.4: bytes=32 time=17ms TTL=128
Reply from 192.168.100.4: bytes=32 time=0ms TTL=128
Reply from 192.168.100.4: bytes=32 time=1ms TTL=128
Reply from 192.168.100.4: bytes=32 time=0ms TTL=128

Ping statistics for 192.168.100.4:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 17ms, Average = 4ms

PC>ping 192.168.100.5

Pinging 192.168.100.5 with 32 bytes of data:

Reply from 192.168.100.5: bytes=32 time=1ms TTL=128
Reply from 192.168.100.5: bytes=32 time=0ms TTL=128
Reply from 192.168.100.5: bytes=32 time=0ms TTL=128
Reply from 192.168.100.5: bytes=32 time=0ms TTL=128

Ping statistics for 192.168.100.5:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 1ms, Average = 0ms

PC>ping 192.168.100.6

Pinging 192.168.100.6 with 32 bytes of data:

Reply from 192.168.100.6: bytes=32 time=1ms TTL=128
Reply from 192.168.100.6: bytes=32 time=7ms TTL=128
Reply from 192.168.100.6: bytes=32 time=0ms TTL=128
Reply from 192.168.100.6: bytes=32 time=0ms TTL=128

Ping statistics for 192.168.100.6:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 7ms, Average = 2ms
```

Kiểm tra kết nối giữa máy 0 (192.168.100.3) và ba máy còn lại

```
PC>ping 192.168.100.3

Pinging 192.168.100.3 with 32 bytes of data:

Reply from 192.168.100.3: bytes=32 time=11ms TTL=128
Reply from 192.168.100.3: bytes=32 time=1ms TTL=128
Reply from 192.168.100.3: bytes=32 time=0ms TTL=128
Reply from 192.168.100.3: bytes=32 time=0ms TTL=128

Ping statistics for 192.168.100.3:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 11ms, Average = 3ms

PC>ping 192.168.100.5

Pinging 192.168.100.5 with 32 bytes of data:

Reply from 192.168.100.5: bytes=32 time=10ms TTL=128
Reply from 192.168.100.5: bytes=32 time=0ms TTL=128
Reply from 192.168.100.5: bytes=32 time=0ms TTL=128
Reply from 192.168.100.5: bytes=32 time=1ms TTL=128

Ping statistics for 192.168.100.5:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 10ms, Average = 2ms

PC>ping 192.168.100.6

Pinging 192.168.100.6 with 32 bytes of data:

Reply from 192.168.100.6: bytes=32 time=0ms TTL=128
Reply from 192.168.100.6: bytes=32 time=0ms TTL=128
Reply from 192.168.100.6: bytes=32 time=0ms TTL=128
Reply from 192.168.100.6: bytes=32 time=0ms TTL=128

Ping statistics for 192.168.100.6:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 0ms, Average = 0ms
```

Kiểm tra kết nối giữa máy 1 (192.168.100.4) và ba máy còn lại

```
PC>ping 192.168.100.3

Pinging 192.168.100.3 with 32 bytes of data:

Reply from 192.168.100.3: bytes=32 time=14ms TTL=128
Reply from 192.168.100.3: bytes=32 time=0ms TTL=128
Reply from 192.168.100.3: bytes=32 time=0ms TTL=128
Reply from 192.168.100.3: bytes=32 time=0ms TTL=128

Ping statistics for 192.168.100.3:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 14ms, Average = 3ms

PC>ping 192.168.100.4

Pinging 192.168.100.4 with 32 bytes of data:

Reply from 192.168.100.4: bytes=32 time=0ms TTL=128
Reply from 192.168.100.4: bytes=32 time=3ms TTL=128
Reply from 192.168.100.4: bytes=32 time=0ms TTL=128
Reply from 192.168.100.4: bytes=32 time=0ms TTL=128

Ping statistics for 192.168.100.4:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 3ms, Average = 0ms

PC>ping 192.168.100.6

Pinging 192.168.100.6 with 32 bytes of data:

Reply from 192.168.100.6: bytes=32 time=13ms TTL=128
Reply from 192.168.100.6: bytes=32 time=0ms TTL=128
Reply from 192.168.100.6: bytes=32 time=0ms TTL=128
Reply from 192.168.100.6: bytes=32 time=0ms TTL=128

Ping statistics for 192.168.100.6:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 13ms, Average = 3ms
```

Kiểm tra kết nối giữa máy 2 (192.168.100.5) và ba máy còn lại

```
PC>ping 192.168.100.3

Pinging 192.168.100.3 with 32 bytes of data:

Reply from 192.168.100.3: bytes=32 time=10ms TTL=128
Reply from 192.168.100.3: bytes=32 time=1ms TTL=128
Reply from 192.168.100.3: bytes=32 time=0ms TTL=128
Reply from 192.168.100.3: bytes=32 time=0ms TTL=128

Ping statistics for 192.168.100.3:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 10ms, Average = 2ms

PC>ping 192.168.100.4

Pinging 192.168.100.4 with 32 bytes of data:

Reply from 192.168.100.4: bytes=32 time=1ms TTL=128
Reply from 192.168.100.4: bytes=32 time=0ms TTL=128
Reply from 192.168.100.4: bytes=32 time=1ms TTL=128
Reply from 192.168.100.4: bytes=32 time=0ms TTL=128

Ping statistics for 192.168.100.4:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 1ms, Average = 0ms

PC>ping 192.168.100.5

Pinging 192.168.100.5 with 32 bytes of data:

Reply from 192.168.100.5: bytes=32 time=1ms TTL=128
Reply from 192.168.100.5: bytes=32 time=0ms TTL=128
Reply from 192.168.100.5: bytes=32 time=1ms TTL=128
Reply from 192.168.100.5: bytes=32 time=0ms TTL=128

Ping statistics for 192.168.100.5:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 1ms, Average = 0ms
```

Kiểm tra kết nối giữa máy 3 (192.168.100.6) và ba máy còn lại

Câu 7: Thiết lập cấu hình TCP/IP cho các Switch

```
lab4a#conf
lab4a#configure ter
lab4a#configure terminal
Enter configuration commands, one per line. End with CNTL/Z.
lab4a(config)#inter
lab4a(config)#interface vlan1
```

Gọi giao diện cấu hình địa chỉ ip

```
lab4a(config-if)#ip address 192.168.100.1 255.255.255.0
```

Thiết lập địa chỉ ip và mặt nạ mạng

```
lab4a(config-if)#no shutdown

lab4a(config-if)#
%LINK-5-CHANGED: Interface Vlan1, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Vlan1, changed state
to up
```

Chuyển trạng thái cổng từ down -> up

```
Switch>enable
Switch#conf
Configuring from terminal, memory, or network [terminal]?
Enter configuration commands, one per line. End with CNTL/Z.
Switch(config)#hostname lab4b
lab4b(config)#enable secret 1
lab4b(config)#interface Vlan1
lab4b(config-if)#ip address 192.168.100.2 255.255.255.0
lab4b(config-if)#no sh

lab4b(config-if)#line con 0
lab4b(config-line)#password 1
lab4b(config-line)#login
lab4b(config-line)#line vty 0 4
lab4b(config-line)#password 1
lab4b(config-line)#login
%LINK-5-CHANGED: Interface Vlan1, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface Vlan1, changed state
to up
```

Đổi tên, thiết lập mật khẩu, thiết lập cấu hình ip cho Switch1

bằng cách sử dụng lại đoạn mã show running-config (đoạn tô vàng) từ Switch0

```
lab4b#show run
lab4b#show running-config
Building configuration...

Current configuration : 552 bytes
!
version 12.1
no service timestamps log datetime msec
no service timestamps debug datetime msec
no service password-encryption
!
hostname lab4b
!
enable secret 5 $1$mERr$Wmdu8FSDG1wNa1xa4SQGi.
!
!
!
spanning-tree mode pvst
!
interface FastEthernet0/1
!
interface FastEthernet1/1
!
interface FastEthernet2/1
!
interface FastEthernet3/1
!
interface FastEthernet4/1
!
interface FastEthernet5/1
!
interface Vlan1
ip address 192.168.100.2 255.255.255.0
!
!
!
!
line con 0
password 1
login
!
line vty 0 4
password 1
login
line vty 5 15
```

```
login
!
!
end
```

Show running-config Switch1 để xem kết quả

```
lab4b#copy run
lab4b#copy running-config st
lab4b#copy running-config startup-config
Destination filename [startup-config]?
Building configuration…
[OK]
```

Copy trực tiếp từ bộ nhớ trong vào bộ nhớ ngoài

Câu 8: Từ PC bất kỳ sử dụng lệnh telnet để kết nối từ xa vào Switch

```
PC>telnet 192.168.100.1
Trying 192.168.100.1 ...Open


User Access Verification

Password:
lab4a>
```

Kết nối bằng giao thức telnet từ máy 0 vào Switch0

```
PC>telnet 192.168.100.1
Trying 192.168.100.1 ...Open


User Access Verification

Password:
lab4a>
```

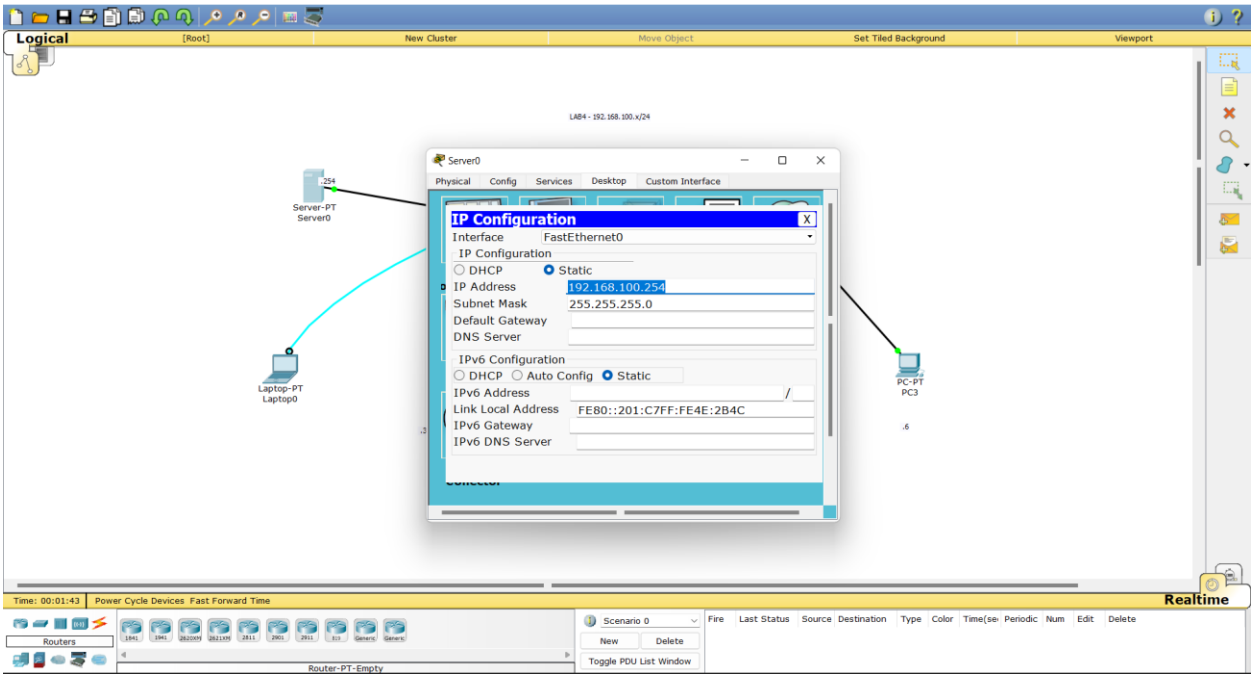
Kết nối bằng giao thức telnet từ máy 3 vào Switch0

Hiện tại có 2 người dùng tại PC0 và PC3 đang telnet vào Switch0, điều này có thể xảy ra vì trước đó chúng ta thiết lập giá trị cho telnet từ 0-4 tức là trong cùng một thời điểm có thể có tối đa 5 người dùng kết nối từ xa vào thiết bị

```
PC>telnet 192.168.100.2
Trying 192.168.100.2 ...Open


User Access Verification

Password:
lab4b>
```

Kết nối bằng giao thức telnet từ máy 2 vào Switch1

Câu 9: Thiết lập địa chỉ IP tĩnh cho Server0 bằng lệnh ipconfig hoặc giao diện đồ hoạ

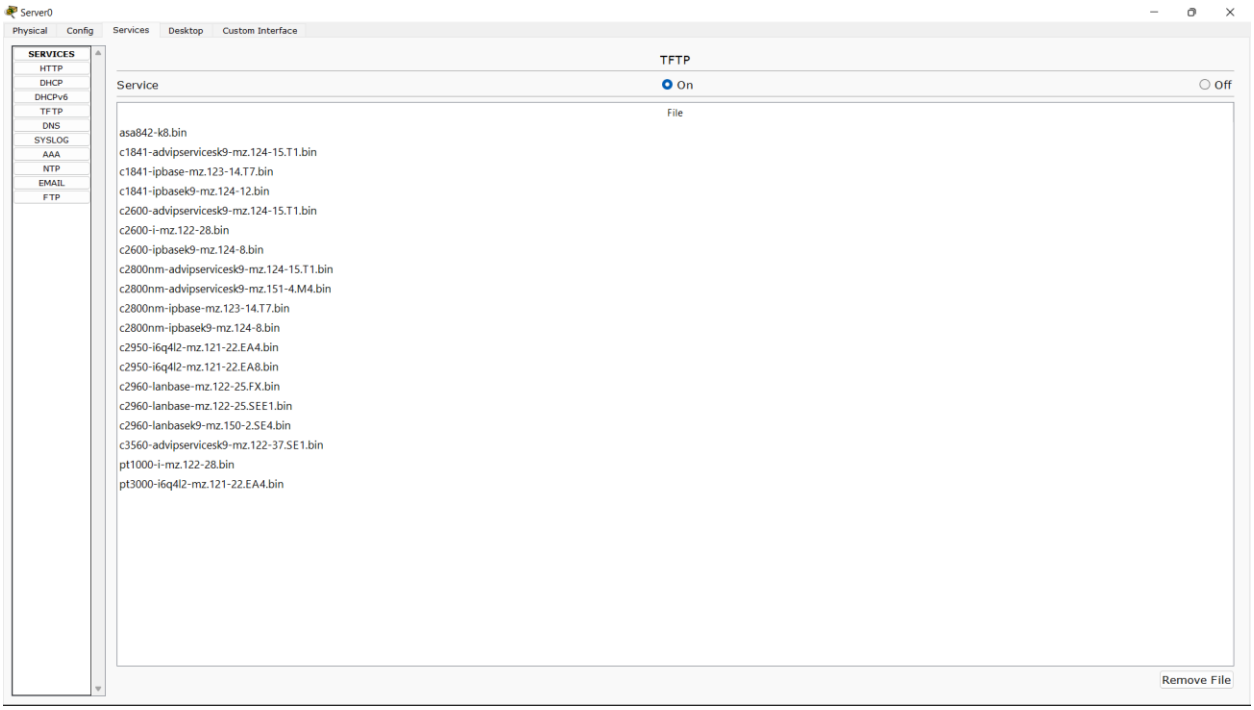


Thiết lập ip tĩnh cho máy chủ Server0

```
SERVER>ipconfig /all

FastEthernet0 Connection:(default port)

Connection-specific DNS Suffix..:
Physical Address.................: 0001.C74E.2B4C
Link-local IPv6 Address.........: FE80::201:C7FF:FE4E:2B4C
IP Address.......................: 192.168.100.254
Subnet Mask.....................: 255.255.255.0
Default Gateway.................: 0.0.0.0
DNS Servers.....................: 0.0.0.0
DHCP Servers....................: 0.0.0.0
DHCPv6 Client DUID..............: 00-01-00-01-C2-0E-3C-4D-00-01-C7-
4E-2B-4C


SERVER>
```

Kiểm tra ip máy chủ trong Command Prompt

Câu 10: Sao lưu cấu hình các Switch lên TFTP Server với tên file lần lượt là lab4a.txt và lab4b.txt



Kiểm tra giao thức TFTP trên máy chủ đã hoạt động hay chưa

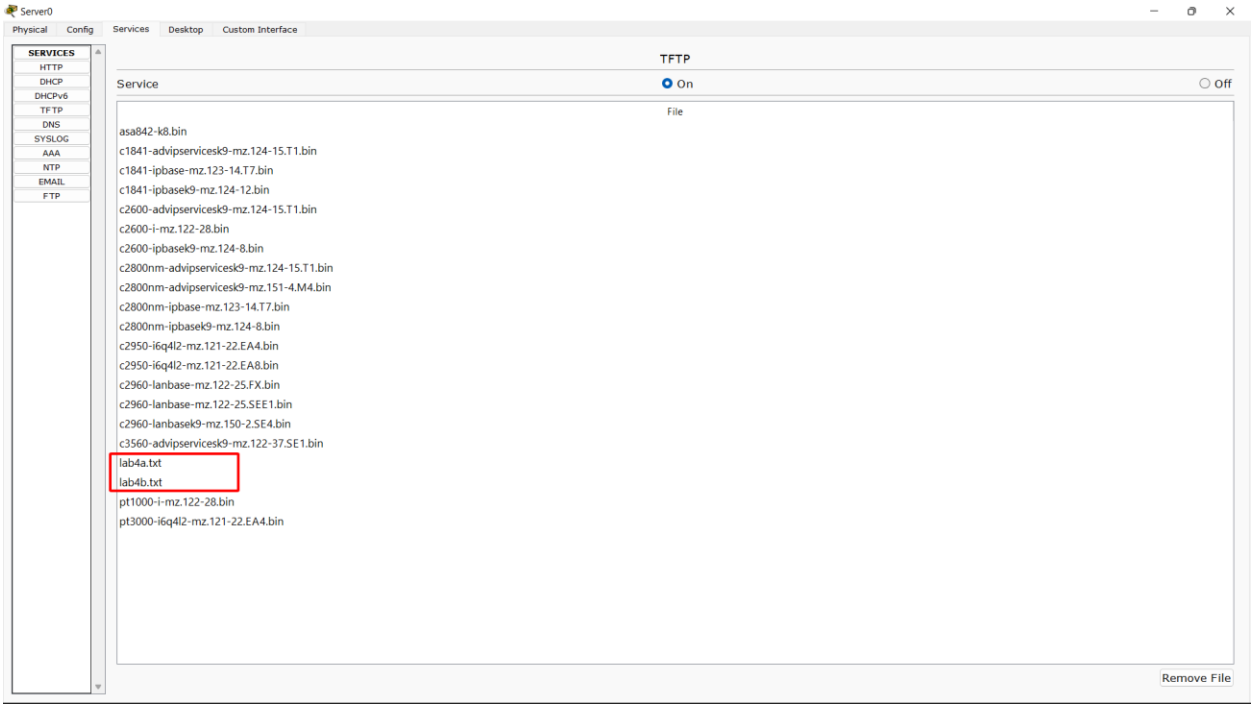
Bật 'ON' là đã hoạt động

```
lab4a>en
lab4a>enable
Password:
lab4a#copy run
lab4a#copy running-config tftp
Address or name of remote host []? 192.168.100.254
Destination filename [lab4a-confg]? lab4a.txt

Writing running-config....!!
[OK - 552 bytes]

552 bytes copied in 3.045 secs (181 bytes/sec)
lab4a#
```

Sao lưu cấu hình Switch0 lên TFTP Server

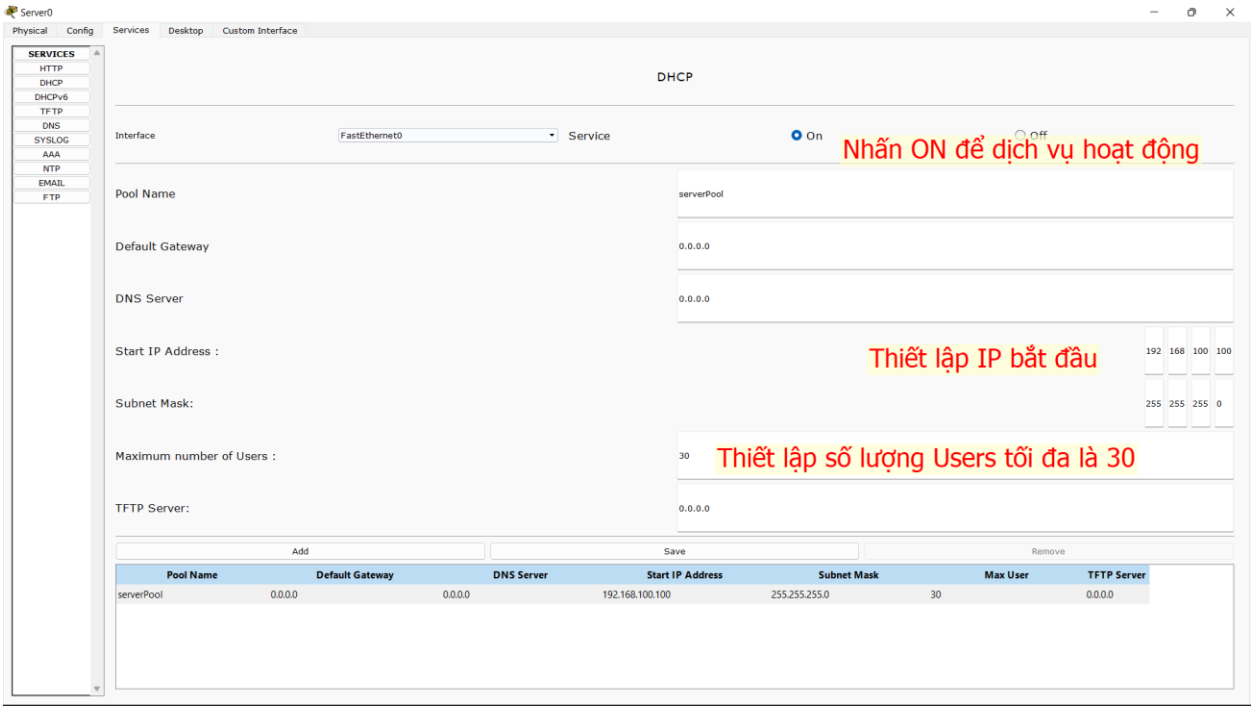
```
lab4b>en
lab4b>enable
Password:
lab4b#copy run
lab4b#copy running-config tftp
Address or name of remote host []? 192.168.100.254
Destination filename [lab4b-confg]? lab4b.txt

Writing running-config....!!
[OK - 552 bytes]

552 bytes copied in 3.014 secs (183 bytes/sec)
lab4b#
```

Sao lưu cấu hình Switch1 lên TFTP Server



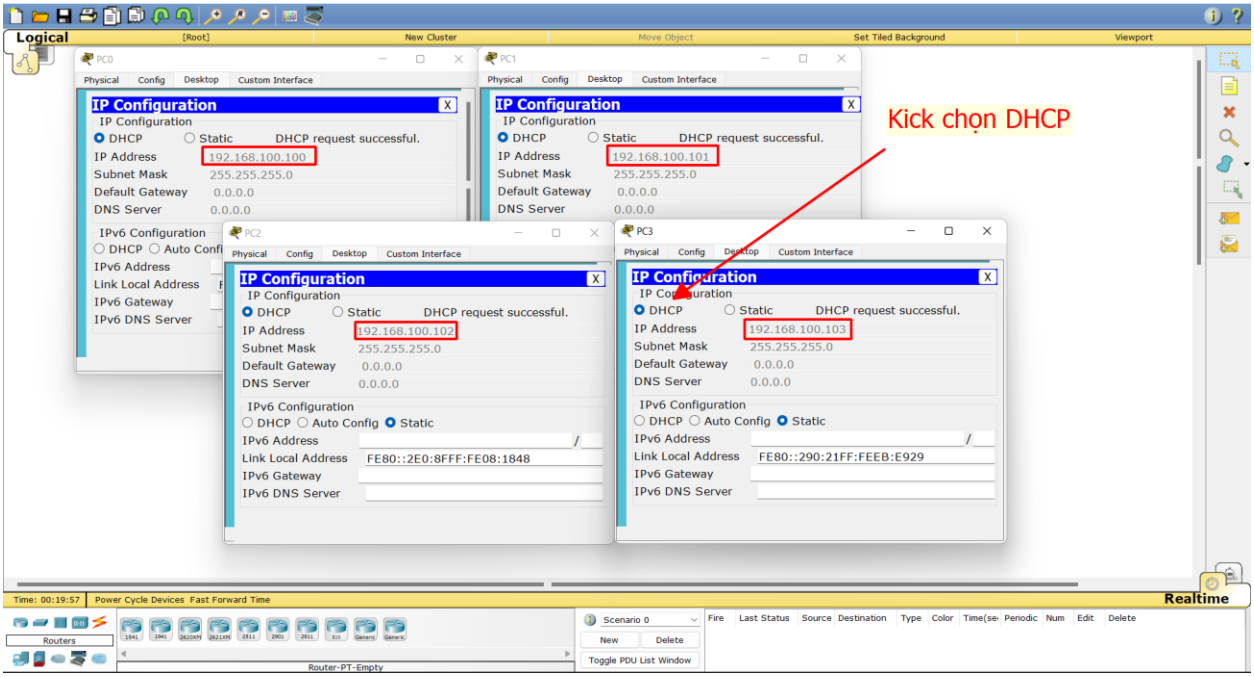
Sao lưu lên TFTP Server thành công

Câu 11. Cấu hình DHCP cho Server0 sao cho số lượng máy được nhận IP động là 30 và địa chỉ bt đầu là 192.168.100.100



Cấu hình DHCP cho Server0 sao cho số lượng máy được nhận IP động là 30 và địa chỉ bắt đầu là 192.168.100.100

Câu 12. Chuyển các PC sang chế độ nhận IP động (lưu ý máy Server sử dụng IP tĩnh)



Chuyển các PC sang chế độ nhận IP động

Câu 13. Kiểm tra cấu hình TCP/IP trên các máy PC bằng lệnh ipconfig /all, và kiểm tra kết nối giữa các PC

```
PC>ipconfig /all

FastEthernet0 Connection:(default port)

Connection-specific DNS Suffix..:
Physical Address.....................: 000D.BD75.BAA9
Link-local IPv6 Address.....: FE80::20D:BDFF:FE75:BAA9
IP Address.....................: 192.168.100.100
Subnet Mask.....................: 255.255.255.0
Default Gateway.................: 0.0.0.0
DNS Servers.....................: 0.0.0.0
DHCP Servers....................: 192.168.100.254
DHCPv6 Client DUID..............: 00-01-00-01-8D-D3-AD-DC-00-0D-BD-
75-BA-A9
```

Kiểm tra ip máy 0 trong Command Prompt

```
PC>ipconfig /all

FastEthernet0 Connection:(default port)

Connection-specific DNS Suffix..:
Physical Address.....................: 000B.BEE7.2A29
Link-local IPv6 Address.....: FE80::20B:BEFF:FEE7:2A29
IP Address.....................: 192.168.100.101
Subnet Mask.....................: 255.255.255.0
Default Gateway.................: 0.0.0.0
DNS Servers.....................: 0.0.0.0
DHCP Servers....................: 192.168.100.254
DHCPv6 Client DUID..............: 00-01-00-01-33-CC-05-09-00-0B-BE-
E7-2A-29
```

Kiểm tra ip máy 1 trong Command Prompt

```
PC>ipconfig /all

FastEthernet0 Connection:(default port)

Connection-specific DNS Suffix..:
Physical Address.................: 00E0.8F08.1848
Link-local IPv6 Address.........: FE80::2E0:8FFF:FE08:1848
IP Address.......................: 192.168.100.102
Subnet Mask.....................: 255.255.255.0
Default Gateway.................: 0.0.0.0
DNS Servers.....................: 0.0.0.0
DHCP Servers....................: 192.168.100.254
DHCPv6 Client DUID..............: 00-01-00-01-36-95-31-73-00-E0-8F-
08-18-48
```

Kiểm tra ip máy 2 trong Command Prompt

```
PC>ipconfig /all

FastEthernet0 Connection:(default port)

Connection-specific DNS Suffix..:
Physical Address.................: 0090.21EB.E929
Link-local IPv6 Address.........: FE80::290:21FF:FEEB:E929
IP Address.......................: 192.168.100.103
Subnet Mask.....................: 255.255.255.0
Default Gateway.................: 0.0.0.0
DNS Servers.....................: 0.0.0.0
DHCP Servers....................: 192.168.100.254
DHCPv6 Client DUID..............: 00-01-00-01-64-2D-55-5E-00-90-21-
EB-E9-29
```

Kiểm tra ip máy 3 trong Command Prompt

Kiểm tra kết nối giữa các PC bằng lệnh ping

```
PC>ping 192.168.100.101

Pinging 192.168.100.101 with 32 bytes of data:

Reply from 192.168.100.101: bytes=32 time=0ms TTL=128
Reply from 192.168.100.101: bytes=32 time=1ms TTL=128
Reply from 192.168.100.101: bytes=32 time=0ms TTL=128
Reply from 192.168.100.101: bytes=32 time=1ms TTL=128

Ping statistics for 192.168.100.101:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 1ms, Average = 0ms

PC>ping 192.168.100.102

Pinging 192.168.100.102 with 32 bytes of data:

Reply from 192.168.100.102: bytes=32 time=0ms TTL=128
Reply from 192.168.100.102: bytes=32 time=0ms TTL=128
Reply from 192.168.100.102: bytes=32 time=0ms TTL=128
Reply from 192.168.100.102: bytes=32 time=0ms TTL=128

Ping statistics for 192.168.100.102:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 0ms, Average = 0ms

PC>ping 192.168.100.103

Pinging 192.168.100.103 with 32 bytes of data:

Reply from 192.168.100.103: bytes=32 time=12ms TTL=128
Reply from 192.168.100.103: bytes=32 time=0ms TTL=128
Reply from 192.168.100.103: bytes=32 time=0ms TTL=128
Reply from 192.168.100.103: bytes=32 time=0ms TTL=128

Ping statistics for 192.168.100.103:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 12ms, Average = 3ms
```

Kiểm tra kết nối giữa máy 0 (192.168.100.100) và ba máy còn lại

```
PC>ping 192.168.100.100

Pinging 192.168.100.100 with 32 bytes of data:

Reply from 192.168.100.100: bytes=32 time=0ms TTL=128
Reply from 192.168.100.100: bytes=32 time=0ms TTL=128
Reply from 192.168.100.100: bytes=32 time=0ms TTL=128
Reply from 192.168.100.100: bytes=32 time=0ms TTL=128

Ping statistics for 192.168.100.100:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 0ms, Average = 0ms

PC>ping 192.168.100.102

Pinging 192.168.100.102 with 32 bytes of data:

Reply from 192.168.100.102: bytes=32 time=0ms TTL=128
Reply from 192.168.100.102: bytes=32 time=0ms TTL=128
Reply from 192.168.100.102: bytes=32 time=0ms TTL=128
Reply from 192.168.100.102: bytes=32 time=1ms TTL=128

Ping statistics for 192.168.100.102:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 1ms, Average = 0ms

PC>ping 192.168.100.103

Pinging 192.168.100.103 with 32 bytes of data:

Reply from 192.168.100.103: bytes=32 time=1ms TTL=128
Reply from 192.168.100.103: bytes=32 time=0ms TTL=128
Reply from 192.168.100.103: bytes=32 time=1ms TTL=128
Reply from 192.168.100.103: bytes=32 time=0ms TTL=128

Ping statistics for 192.168.100.103:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
             Minimum = 0ms, Maximum = 1ms, Average = 0ms
```

Kiểm tra kết nối giữa máy 1 (192.168.100.101) và ba máy còn lại

```
PC>ping 192.168.100.100

Pinging 192.168.100.100 with 32 bytes of data:

Reply from 192.168.100.100: bytes=32 time=0ms TTL=128
Reply from 192.168.100.100: bytes=32 time=0ms TTL=128
Reply from 192.168.100.100: bytes=32 time=0ms TTL=128
Reply from 192.168.100.100: bytes=32 time=0ms TTL=128

Ping statistics for 192.168.100.100:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 0ms, Average = 0ms

PC>ping 192.168.100.101

Pinging 192.168.100.101 with 32 bytes of data:

Reply from 192.168.100.101: bytes=32 time=1ms TTL=128
Reply from 192.168.100.101: bytes=32 time=0ms TTL=128
Reply from 192.168.100.101: bytes=32 time=0ms TTL=128
Reply from 192.168.100.101: bytes=32 time=0ms TTL=128

Ping statistics for 192.168.100.101:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 1ms, Average = 0ms

PC>ping 192.168.100.103

Pinging 192.168.100.103 with 32 bytes of data:

Reply from 192.168.100.103: bytes=32 time=0ms TTL=128
Reply from 192.168.100.103: bytes=32 time=0ms TTL=128
Reply from 192.168.100.103: bytes=32 time=1ms TTL=128
Reply from 192.168.100.103: bytes=32 time=1ms TTL=128

Ping statistics for 192.168.100.103:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
             Minimum = 0ms, Maximum = 1ms, Average = 0ms
```

Kiểm tra kết nối giữa máy 2 (192.168.100.102) và ba máy còn lại

```
PC>ping 192.168.100.100

Pinging 192.168.100.100 with 32 bytes of data:

Reply from 192.168.100.100: bytes=32 time=0ms TTL=128
Reply from 192.168.100.100: bytes=32 time=0ms TTL=128
Reply from 192.168.100.100: bytes=32 time=0ms TTL=128
Reply from 192.168.100.100: bytes=32 time=0ms TTL=128

Ping statistics for 192.168.100.100:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 0ms, Average = 0ms

PC>ping 192.168.100.101

Pinging 192.168.100.101 with 32 bytes of data:

Reply from 192.168.100.101: bytes=32 time=0ms TTL=128
Reply from 192.168.100.101: bytes=32 time=0ms TTL=128
Reply from 192.168.100.101: bytes=32 time=2ms TTL=128
Reply from 192.168.100.101: bytes=32 time=9ms TTL=128

Ping statistics for 192.168.100.101:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
Minimum = 0ms, Maximum = 9ms, Average = 2ms

PC>ping 192.168.100.102

Pinging 192.168.100.102 with 32 bytes of data:

Reply from 192.168.100.102: bytes=32 time=1ms TTL=128
Reply from 192.168.100.102: bytes=32 time=0ms TTL=128
Reply from 192.168.100.102: bytes=32 time=0ms TTL=128
Reply from 192.168.100.102: bytes=32 time=0ms TTL=128

Ping statistics for 192.168.100.102:
Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
             Minimum = 0ms, Maximum = 1ms, Average = 0ms
```

Kiểm tra kết nối giữa máy 3 (192.168.100.103) và ba máy còn lại

END