TỔNG LIÊN ĐOÀN LAO ĐỘNG VIỆT NAM
TRƯỜNG ĐẠI HỌC TÔN ĐỨC THẮNG
KHOA CÔNG NGHỆ THÔNG TIN

Báo cáo môn:
GIAO THỨC MẠNG MÁY TÍNH

Thiết kế và triển mạng máy tính
Trường đại học Tôn Đức Thắng có 3 chi nhánh ở 3 tỉnh khác nhau

Giảng viên hướng dẫn: **TS.Trương Đình Tú**
Người thực hiện: **Nguyễn Thành Lộc - 5200848**
Vũ Quang Kiệt - 52000844

THÀNH PHỐ HỒ CHÍ MINH, NĂM 2022

LỜI CẢM ƠN

Đầu tiên chúng em xin gửi lời cảm ơn đến các thầy cô trong Khoa Công Nghệ Thông Tin vì đã mang tới cho chúng em một bài tập mang nhiều kiến thức hay và bổ ích. Với những kiến thức này chúng em đã có thêm kinh nghiệm, kiến thức để dùng cho tương lai sau này.
Cuối cùng,chúng em xin kính chúc quý Thầy Cô trong Khoa Công Nghệ Thông Tin dồi dào sức khỏe và niềm tin để tiếp tục thực hiện sứ mệnh cao đẹp của mình là truyền đạt kiến thức cho thế hệ mai sau.

ĐỒ ÁN ĐƯỢC HOÀN THÀNH TẠI TRƯỜNG ĐẠI HỌC TÔN ĐỨC THẮNG

Chúng tôi xin cam đoan đây là sản phẩm đồ án của riêng chúng tôi và được sự hướng dẫn của thầy Trương Đình Tú. Các nội dung nghiên cứu, kết quả trong đề tài này là trung thực và chưa công bố dưới bất kỳ hình thức nào trước đây. Những số liệu trong các bảng biểu phục vụ cho việc phân tích, nhận xét, đánh giá được chính tác giả thu thập từ các nguồn khác nhau có ghi rõ trong phần tài liệu tham khảo.

Ngoài ra, trong đồ án còn sử dụng một số nhận xét, đánh giá cũng như số liệu của các tác giả khác, cơ quan tổ chức khác đều có trích dẫn và chú thích nguồn gốc.

Nếu phát hiện có bất kỳ sự gian lận nào chúng tôi xin hoàn toàn chịu trách nhiệm về nội dung đồ án của mình. Trường đại học Tôn Đức Thắng không liên quan đến những vi phạm tác quyền, bản quyền do chúng tôi gây ra trong quá trình thực hiện (nếu có).

TP. Hồ Chí Minh, ngày 29 tháng 5 năm 2022

Tác giả

KIET
Vũ Quang Kiệt

LOC
Nguyễn Thành Lộc

(ký tên và ghi rõ họ tên)

Mục lục

Chương 1

Giới thiệu

1.1 Giới thiệu đề tài

Trong đồ án cuối kì của môn Giao thức mạng máy tính này, chúng em sẽ triển khai sơ đồ mạng của tất cả 3 chi nhánh của trường Đại học Tôn Đức Thắng.

Sơ đồ mạng dưới đây tuy chỉ là sơ đồ tổng quát mà nhóm em lập nên, tuy nhiên vẫn có thể mở rộng thành một sơ đồ mạng hoàn chỉnh.

1.2 Mô tả đề tài

Đây là đề tài triển khai sơ đồ mạng các cơ sở của đại học Tôn Đức Thắng gồm 3 cơ sở:

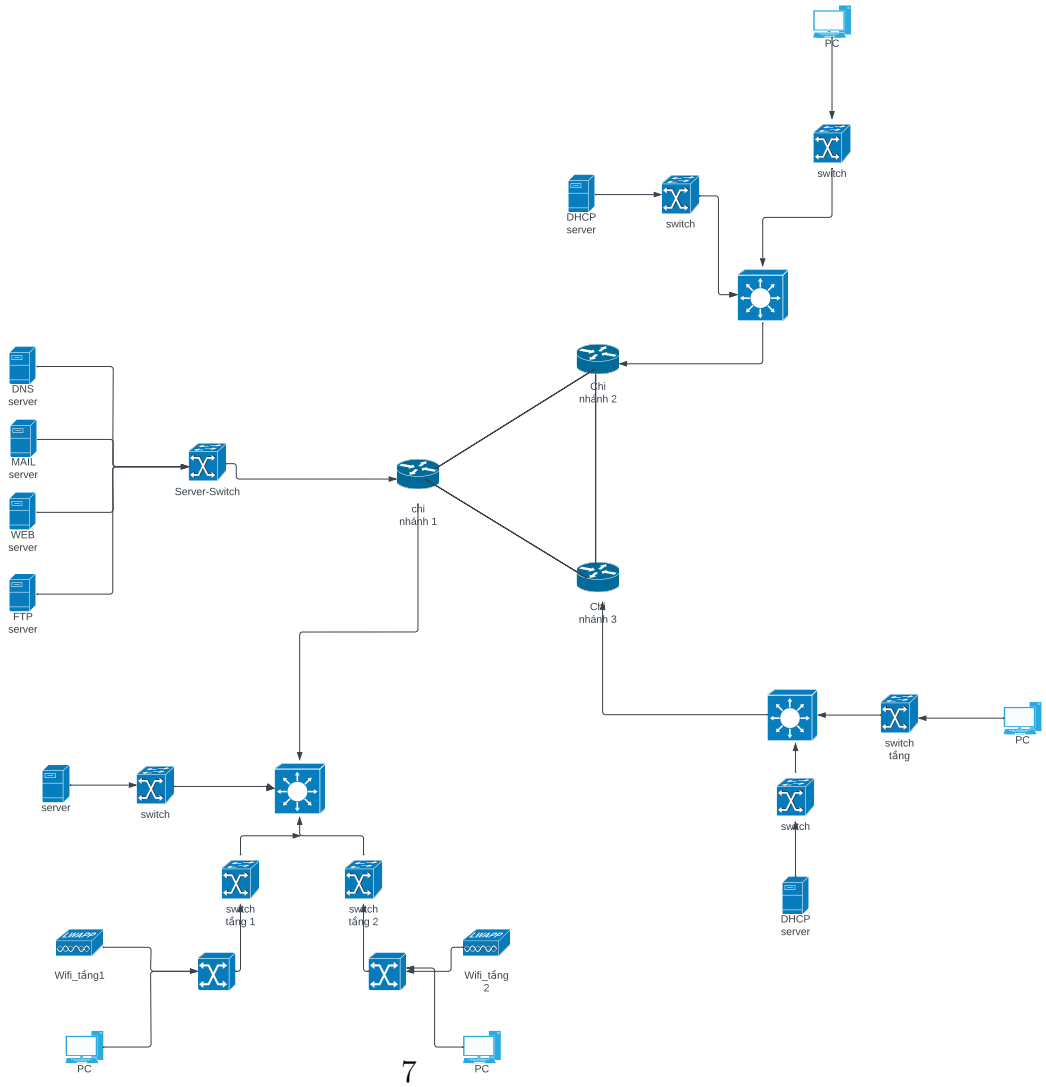
- Cơ sở chính: Số 19, Nguyễn Hữu Thọ, P.Tân Phong, Quận 7
- Cơ sở 2: Số 22 Nguyễn Đình Chiểu, P. Vĩnh Phước, TP. Nha Trang, Khánh Hòa.
- Cơ sở 3: Đường Nguyễn Tuân, P. Lộc Tiến, TP. Bảo Lộc, Lâm Đồng.

Các thao tác trong đề tài: Cấu hình vlan, Cấu hình trunk, sử dụng một số giao thức đã được học như STP, EtherChannel, OSPF,... Ngoài ra còn có cấu hình DHCP, IPv4, Ipv6

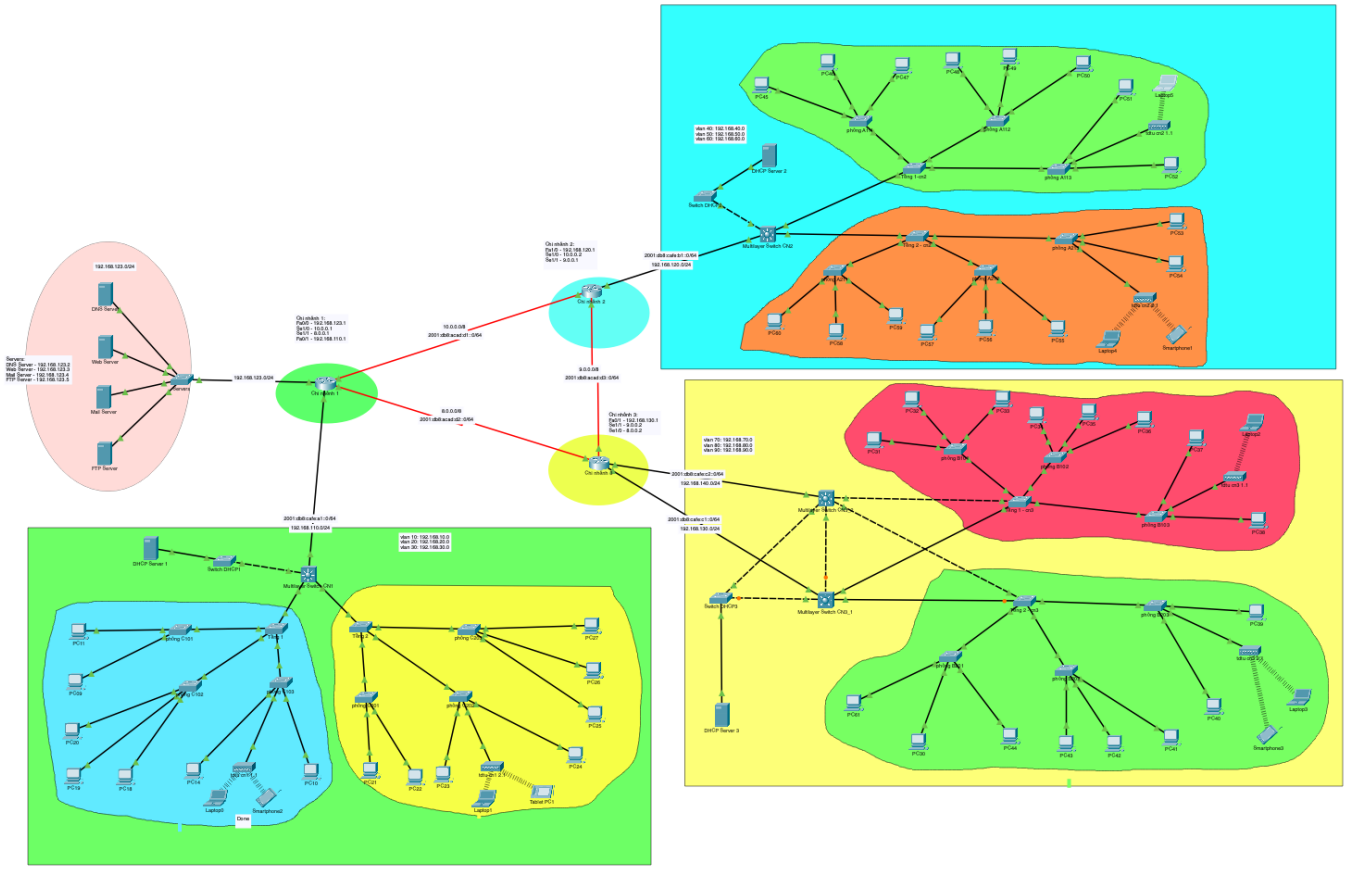
Chương 2

Mô hình hệ thống

2.1 Mô hình luận lí



2.2 Mô hình vật lí



Các thiết bị được sử dụng trong sơ đồ:
- Máy tính, điện thoại,...: 56 thiết bị.
- Wifi (access point): 6 thiết bị.
- Switch: 28 thiết bị.
- Multilayer Switch: 4 thiết bị.
- Router: 3 thiết bị-3 chi nhánh.
- Server: 7 thiết bị.

+ 3 DHCP server
+ DNS server
+ MAIL server
+ WEB server
+ FTP server

Chương 3

Thông tin cài đặt hệ thống

3.1 Thông tin kết nối port trong hệ thống

3.1.1 Chi nhánh 1 - Cở sở Tân Phong

CHI NHÁNH 1							
Tầng 1	PC11 to C101	Fa0	Fa1/1	PC11-Fa0---C101-Fa1/1	Ethernet		VLAN 10
	PC09 to C101	Fa0	Fa2/1	PC09-Fa0---C101-Fa2/1			
	PC20 to C102	Fa0	Fa1/1	PC20-Fa0---C102-Fa1/1	Ethernet		VLAN 20
	PC19 to C102	Fa0	Fa2/1	PC19-Fa0---C102-Fa2/1			
	PC18 to C102	Fa0	Fa3/1	PC18-Fa0---C102-Fa3/1			
	PC14 to C103	Fa0	Fa3/1	PC14-Fa0---C103-Fa3/1	Ethernet		VLAN 30
	PC10 to C103	Fa0	Fa1/1	PC14-Fa0---C103-Fa1/1			
Tầng 2	PC21 to C201	Fa0	Fa1/1	PC21-Fa0---C201-Fa1/1	Ethernet		VLAN 10
	PC22 to C201	Fa0	Fa2/1	PC22-Fa0---C201-Fa2/1			
	PC23 to C202	Fa0	Fa3/1	PC23-Fa0---C202-Fa3/1	Ethernet		VLAN 20
	PC24 to C202	Fa0	Fa1/1	PC24-Fa0---C202-Fa1/1			
	PC27 to C203	Fa0	Fa1/1	PC27-Fa0---C203-Fa1/1	Ethernet		VLAN 30
	PC26 to C203	Fa0	Fa2/1	PC26-Fa0---C203-Fa2/1			
	PC25 to C203	Fa0	Fa3/1	PC25-Fa0---C203-Fa3/1			
Tầng 1	C101 to Tầng 1	Fa0/1	Fa0/1	C101-Fa0/1---Tầng1-Fa0/1	Ethernet		Trunking
	C102 to Tầng1	Fa0/1	Fa0/2	C102-Fa0/1---Tầng1-Fa0/2			
	C103 to Tầng1	Fa0/1	Fa0/3	C103-Fa0/1---Tầng1-Fa0/3			
	Tầng1 to Switch chính	Fa0/4	Fa0/4	Tầng1-Fa0/4---Switch-Fa0/4			
Tầng 2	C201 to Tầng 2	Fa0/1	Fa0/1	C201-Fa0/1---Tầng2-Fa0/1	Ethernet		Trunking
	C202 to Tầng2	Fa0/1	Fa0/2	C202-Fa0/1---Tầng2-Fa0/2			
	C203 to Tầng1	Fa0/1	Fa0/3	C203-Fa0/1---Tầng2-Fa0/3			
	Tầng2 to Switch chính	Fa0/4	Fa0/4	Tầng1-Fa0/4---Switch-Fa0/4			

3.1.2 Chi nhánh 2 - Cơ sở Bảo Lộc

No	Source to Destination Device	Source Interface	Destination Interface	Date Cable Lable	Protocal	Etherchanel/ VSAN/VFC	Trunking/VLAN
TẦNG 1	Phòng A111 to PC45	Fa0	Fa1/1	A111-Fa1/1---PC45-Fa0	Ethernet		VLAN 40
	Phòng A111 to PC46	Fa0	Fa2/1	A111-Fa2/1---PC46-Fa0			
	Phòng A111 to PC47	Fa0	Fa3/1	A111-Fa3/1---PC47-Fa0			
	Phòng A112 to PC48	Fa0	Fa1/1	A112-Fa1/1---PC48-Fa0	Ethernet		VLAN 50
	Phòng A112 to PC49	Fa0	Fa2/1	A112-Fa2/1---PC49-Fa0			
	Phòng A112 to PC50	Fa0	Fa3/1	A112-Fa3/1---PC50-Fa0			
	Phòng A113 to PC51	Fa0	Fa1/1	A113-Fa1/1---PC51-Fa0	Ethernet		VLAN 60
	Phòng A113 to PC52	Fa0	Fa3/1	A113-Fa3/1---PC52-Fa0			
TẦNG 2	Phòng A211 to PC60	Fa0	Fa1/1	A211-Fa1/1---PC60-Fa0	Ethernet		VLAN 40
	Phòng A211 to PC59	Fa0	Fa3/1	A111-Fa3/1---PC59-Fa0			
	Phòng A211 to PC58	Fa0	Fa2/1	A111-Fa2/1---PC58-Fa0			
	Phòng A212 to PC57	Fa0	Fa1/1	A212-Fa1/1---PC57-Fa0	Ethernet		VLAN 50
	Phòng A212 to PC56	Fa0	Fa2/1	A212-Fa2/1---PC56-Fa0			
	Phòng A212 to PC55	Fa0	Fa3/1	A212-Fa3/1---PC55-Fa0			
	Phòng A213 to PC54	Fa0	Fa2/1	A213-Fa2/1---PC54-Fa0	Ethernet		VLAN 60
	Phòng A213 to PC53	Fa0	Fa1/1	A213-Fa1/1---PC53-Fa0			
TẦNG 1	Tầng 1-cn2 to Switch chính	Fa0/1	Fa0/3	Tầng 1_cn2 -Fa0/1---Switch chính-Fa0/3	Ethernet		Trunking
	Tầng 1-cn2 to Phòng A111	Fa0/2	Fa0/1	Tầng 1_cn2 -Fa0/2---Phòng A111-Fa0/1			
	Tầng 1-cn2 to Phòng A112	Fa0/3	Fa0/1	Tầng 1_cn2 -Fa0/3---Phòng A112-Fa0/1			
	Tầng 1-cn2 to Phòng A113	Fa0/4	Fa0/1	Tầng 1_cn2 -Fa0/4---Phòng A113-Fa0/3			
TẦNG 2	Tầng 2-cn2 to Switch chính	Fa0/1	Fa0/4	Tầng 1_cn2 -Fa0/1---Switch chính-Fa0/3	Ethernet		Trunking
	Tầng 2-cn2 to Phòng A211	Fa0/2	Fa0/1	Tầng 1_cn2 -Fa0/2---Phòng A111-Fa0/1			
	Tầng 2-cn2 to Phòng A212	Fa0/3	Fa0/1	Tầng 1_cn2 -Fa0/3---Phòng A112-Fa0/1			
	Tầng 2-cn2 to Phòng A213	Fa0/4	Fa0/1	Tầng 1_cn2 -Fa0/4---Phòng A113-Fa0/3			
	Switch chính to server switch	Fa0/2	Fa0/1	Switch chinh-Fa0/1---server switch-Fa0/1	Ethernet		Trunking

3.1.3 Chi nhánh 3 - Cơ sở Nha Trang

CHI NHÁNH 3							
Tầng 1	Phòng B101 to PC31	Fa0	Fa1/1	B101-Fa1/1---PC31-Fa0	Ethernet		VLAN 70
	Phòng B101 to PC32	Fa0	Fa2/1	B101-Fa2/1---PC32-Fa0			
	Phòng B101 to PC33	Fa0	Fa3/1	B101-Fa3/1---PC33-Fa0			
	Phòng B102 to PC34	Fa0	Fa1/1	B102-Fa1/1---PC34-Fa0	Ethernet		VLAN 80
	Phòng B102 to PC35	Fa0	Fa2/1	B102-Fa2/1---PC35-Fa0			
	Phòng B102 to PC36	Fa0	Fa3/1	B102-Fa3/1---PC36-Fa0			
	Phòng B103 to PC37	Fa0	Fa1/1	B103-Fa1/1---PC37-Fa0	Ethernet		VLAN 90
	Phòng B103 to PC38	Fa0	Fa3/1	B103-Fa3/1---PC38-Fa0			
Tầng 2	Phòng B201 to PC61	Fa0	Fa1/1	B201-Fa1/1---PC61-Fa0	Ethernet		VLAN 70
	Phòng B201 to PC30	Fa0	Fa2/1	B201-Fa2/1---PC30-Fa0			
	Phòng B201 to PC44	Fa0	Fa3/1	B201-Fa3/1---PC44-Fa0			
	Phòng B202 to PC41	Fa0	Fa3/1	B202-Fa3/1---PC41-Fa0	Ethernet		VLAN 80
	Phòng B202 to PC42	Fa0	Fa2/1	B202-Fa2/1---PC42-Fa0			
	Phòng B202 to PC43	Fa0	Fa1/1	B202-Fa1/1---PC43-Fa0			
	Phòng B203 to PC39	Fa0	Fa1/1	B203-Fa1/1---PC39-Fa0	Ethernet		VLAN 90
	Phòng B203 to PC40	Fa0	Fa3/1	B104-Fa3/1---PC40-Fa0			
Tầng 1	Tầng 1-cn3 to Switch CN3_1	Fa0/1	Fa0/3	Tầng 1-Fa0/1---Switch-Fa0/3	Ethernet		Trunking
	Tầng 1-cn3 to Switch CN3_2	Fa0/5	Fa0/2	Tầng 1-Fa0/5---Switch-Fa0/2			
	Tầng 1-cn3 to B101	Fa0/2	Fa0/1	Tầng 1-Fa0/2---B101-Fa0/1			
	Tầng 1-cn3 to B102	Fa0/3	Fa0/1	Tầng 1-Fa0/3---B102-Fa0/1			
	Tầng 1-cn3 to B103	Fa0/4	Fa0/1	Tầng 1-Fa0/4---B103-Fa0/1			
Tầng 2	Tầng 2-cn3 to Switch CN3_1	Fa0/1	Fa0/4	Tầng 2-Fa0/1---Switch-Fa0/4	Ethernet		Trunking
	Tầng 2-cn3 to Switch CN3_2	Fa0/5	Fa0/3	Tầng 2-Fa0/5---Switch-Fa0/3			
	Tầng 2-cn3 to B201	Fa0/2	Fa0/1	Tầng 2-Fa0/2---B201-Fa0/1			
	Tầng 2-cn3 to B202	Fa0/3	Fa0/1	Tầng 2-Fa0/3---B202-Fa0/1			
	Tầng 2-cn3 to B203	Fa0/4	Fa0/1	Tầng 2-Fa0/4---B203-Fa0/1			

3.2 Thông tin vlan,interface vlan trong hệ thống

GODIVA IP ADDRESS AND VLAN ASSIGNMENT FOR NETWORK

MAJOR NETWORK:

No.	VLAN name	VLAN ID	VLAN description		
Remote Site				**Subnet**	**Default Gateway**
1	v10	10	Subnet for Tân Phong	192.168.10.0/24	192.168.10.1
2	v20	20		192.168.20.0/24	192.168.20.1
3	v30	30		192.168.30.0/24	192.168.30.1
4	v40	40	Subnet for Bảo Lộc	192.168.40.0/24	192.168.40.1
5	v50	50		192.168.50.0/24	192.168.50.1
6	v60	60		192.168.60.0/24	192.168.60.1
7	v70	70	Subnet for Nha Trang	192.168.70.0/24	192.168.70.1
8	v80	80		192.168.80.0/24	192.168.80.1
9	v90	90		192.168.90.0/24	192.168.90.1
HeadOffice Site				**Subnet**	**Default Gateway**
1	ServerVlan	123	VLAN for Server	172.16.123.0/24	172.16.123.1

3.3 Thông tin thiết kế quy hoạch địa chỉ (IP planning)

GODIVA-IP Planing

STT	Server	Hostname	Interface	VLAN	IP Address	Ipv6	Subnet	Gateway
I	UCS-FI							
I.A	SERVER							
1	DNS serrver		mgmt	123	192.168.123.2	FDD2:8301:75CA :615E::	255.255.255.0	192.168.123.1
2	Web serrver		mgmt	123	192.168.123.3		255.255.255.0	192.168.123.1
3	Mail server		mgmt	123	192.168.123.4		255.255.255.0	192.168.123.1
4	FTP serrver		mgmt	123	192.168.123.5		255.255.255.0	192.168.123.1
5	DHCP serrver 1		mgmt	1	192.168.1.2		255.255.255.0	192.168.1.1
6	DHCP serrver 2		mgmt	2	192.168.2.2		255.255.255.0	192.168.2.1
7	DHCP serrver 3		mgmt	3	192.168.3.5		255.255.255.0	192.168.3.3
	Switch							
1	Switch CN 1		Mgmt	110	192.168.110.2	2001:db8:cafe:a1::2/	255.255.255.0	172.16.110.1
2	Switch CN 2		Mgmt	120	192.168.120.2	2001:db8:cafe:b1::2/	255.255.255.0	172.16.120.1
3	Switch CN 3_1		Mgmt	130	192.168.130.2	2001:db8:cafe:c1::2/	255.255.255.0	172.16.130.1
4	Switch CN3_2		mgmt	140	192.168.140.2	2001:db8:cafe:c2::2/	255.255.255.0	172.16.140.1
	Wifi							
1	tdtu cn1 1.1		Mgmt	30			255.255.255.0	172.16.30.1
2	tdtu cn1 2.1		Mgmt	30			255.255.255.0	172.16.50.1
3	tdtu cn2 1.1		Mgmt	60			255.255.255.0	172.16.60.1
4	tdtu cn2 2.1		Mgmt	60			255.255.255.0	172.16.60.1
5	tdtu cn3 1.1		Mgmt	90			255.255.255.0	172.16.90.1
6	tdtu cn3 2.1		Mgmt	90			255.255.255.0	172.16.90.1

Chương 4

Cấu hình hạ tầng

4.1 Cấu hình vlan, interface, port channel

CHI NHÁNH 1
Vlan 10, 20, 30

Multilayer Switch CN1:

```
conf ter
vlan 10
name v10
vlan 20
name v20
vlan 30
name v30
vlan 999
name v999

ipv6 unicast-routing
interface Vlan10
ip address 192.168.10.1 255.255.255.0
ip helper-address 192.168.1.2
ipv6 enable
ipv6 address 2001:DB8:CAFE:A10::1/64
interface Vlan20
ip address 192.168.20.1 255.255.255.0
ip helper-address 192.168.1.2
ipv6 address 2001:DB8:CAFE:A20::1/64
ipv6 enable
interface Vlan30
ip address 192.168.30.1 255.255.255.0
ip helper-address 192.168.1.2
```

ipv6 address 2001:DB8:CAFE:A30::1/64
ipv6 enable
interface Vlan999
ip address 192.168.1.1 255.255.255.0
interface FastEthernet0/1
no switchport
ip address 192.168.110.2 255.255.255.0
ipv6 address 2001:DB8:CAFE:A1::2/64
interface FastEthernet0/2
switchport trunk encapsulation dot1q
switchport mode trunk
interface FastEthernet0/3
switchport trunk encapsulation dot1q
switchport mode trunk
interface FastEthernet0/4
switchport trunk encapsulation dot1q
switchport mode trunk
ip routing

Switch Tầng 1:

conf ter
vlan 10
name v10
vlan 20
name v20
vlan 30
name v30
vlan 999
name v999
interface FastEthernet0/1
switchport mode trunk
interface FastEthernet0/2
switchport mode trunk
interface FastEthernet0/3
switchport mode trunk
interface FastEthernet0/4
switchport mode trunk

Switch Phòng C101:

conf ter
vlan 10
name v10
vlan 20

```
 name v20
 vlan 30
 name v30
 vlan 999
 name v999
interface FastEthernet0/1
switchport mode trunk
interface FastEthernet0/2
switchport mode access
 switchport access vlan 10
interface FastEthernet0/3
switchport mode access
 switchport access vlan 10
```

Switch Phòng C102:

```
 conf ter
 vlan 10
 name v10
 vlan 20
 name v20
 vlan 30
 name v30
 vlan 999
 name v999
interface FastEthernet0/1
switchport mode trunk
interface FastEthernet1/1
switchport mode access
 switchport access vlan 20
interface FastEthernet2/1
switchport mode access
 switchport access vlan 20
interface FastEthernet3/1
switchport mode access
 switchport access vlan 20
```

Switch Phòng C103:

```
 conf ter
 vlan 10
 name v10
 vlan 20
 name v20
 vlan 30
```

```
 name v30
 vlan 999
 name v999
interface FastEthernet0/1
switchport mode trunk
interface FastEthernet1/1
switchport mode access
 switchport access vlan 30
interface FastEthernet2/1
switchport mode access
 switchport access vlan 30
interface FastEthernet3/1
switchport mode access
 switchport access vlan 30
```

Switch Tầng 2:

```
 conf ter
 vlan 10
 name v10
 vlan 20
 name v20
 vlan 30
 name v30
 vlan 999
 name v999
interface FastEthernet0/1
switchport mode trunk
interface FastEthernet0/2
switchport mode trunk
interface FastEthernet0/3
switchport mode trunk
interface FastEthernet0/4
switchport mode trunk
```

Switch Phòng C201:

```
 conf ter
 vlan 10
 name v10
 vlan 20
 name v20
 vlan 30
 name v30
 vlan 999
```

```
 name v999
interface FastEthernet0/1
switchport mode trunk
interface FastEthernet1/1
switchport mode access
 switchport access vlan 10
interface FastEthernet 2/1
switchport mode access
 switchport access vlan 20
```

Switch Phòng C202:

```
 conf ter
 vlan 10
 name v10
 vlan 20
 name v20
 vlan 30
 name v30
 vlan 999
 name v999
interface FastEthernet0/1
switchport mode trunk
interface FastEthernet1/1
switchport mode access
 switchport access vlan 20
interface FastEthernet2/1
switchport mode access
 switchport access vlan 20
interface FastEthernet3/1
switchport mode access
 switchport access vlan 20
```

Switch Phòng C203:

```
 conf ter
 vlan 10
 name v10
 vlan 20
 name v20
 vlan 30
 name v30
 vlan 999
 name v999
interface FastEthernet0/1
```

switchport mode trunk
interface FastEthernet1/1
switchport mode access
 switchport access vlan 30
interface FastEthernet2/1
switchport mode access
 switchport access vlan 30
interface FastEthernet3/1
switchport mode access
 switchport access vlan 30

CHI NHÁNH 2

Vlan 40, 50, 60

Multilayer Switch CN2:

conf ter
vlan 40
name v40
vlan 50
name v50
vlan 60
name v60
vlan 999
name v999

ipv6 unicast-routing
interface Vlan40
ip address 192.168.40.1 255.255.255.0
ip helper-address 192.168.2.2
ipv6 enable
ipv6 address 2001:DB8:CAFE:A40::1/64
interface Vlan50
ip address 192.168.50.1 255.255.255.0
ip helper-address 192.168.2.2
ipv6 enable
ipv6 address 2001:DB8:CAFE:A50::1/64
interface Vlan60
ip address 192.168.60.1 255.255.255.0
ip helper-address 192.168.2.2
ipv6 enable
ipv6 address 2001:DB8:CAFE:A60::1/64
interface Vlan999
ip address 192.168.2.1 255.255.255.0
interface FastEthernet0/1
no switchport

ip address 192.168.120.2 255.255.255.0
ipv6 address 2001:DB8:CAFE:B1::2/64
interface FastEthernet0/2
switchport trunk encapsulation dot1q
switchport mode trunk
interface FastEthernet0/3
switchport trunk encapsulation dot1q
switchport mode trunk
interface FastEthernet0/4
switchport trunk encapsulation dot1q
switchport mode trunk
ip routing

Switch Tầng 1:

conf ter
vlan 40
name v40
vlan 50
name v50
vlan 60
name v60
vlan 999
name v999
interface FastEthernet0/1
switchport mode trunk
interface FastEthernet0/2
switchport mode trunk
interface FastEthernet0/3
switchport mode trunk
interface FastEthernet0/4
switchport mode trunk

Switch Tầng 2:

conf ter
vlan 40
name v40
vlan 50
name v50
vlan 60
name v60
vlan 999
name v999
interface FastEthernet0/1

switchport mode trunk
interface FastEthernet0/2
switchport mode trunk
interface FastEthernet0/3
switchport mode trunk
interface FastEthernet0/4
switchport mode trunk

Switch Phòng A111:

```
 conf ter
 vlan 40
 name v40
 vlan 50
 name v50
 vlan 60
 name v60
 vlan 999
 name v999
interface FastEthernet0/1
switchport mode trunk
interface FastEthernet1/1
switchport mode access
 switchport access vlan 40
interface FastEthernet2/1
switchport mode access
 switchport access vlan 40
interface FastEthernet3/1
switchport mode access
 switchport access vlan 40
```

Switch Phòng A112:

```
 conf ter
 vlan 40
 name v40
 vlan 50
 name v50
 vlan 60
 name v60
 vlan 999
 name v999
interface FastEthernet0/1
switchport mode trunk
interface FastEthernet1/1
```

```
switchport mode access
 switchport access vlan 50
interface FastEthernet2/1
switchport mode access
 switchport access vlan 50
interface FastEthernet3/1
switchport mode access
 switchport access vlan 50
```

Switch Phòng A113:

```
 conf ter
 vlan 40
 name v40
 vlan 50
 name v50
 vlan 60
 name v60
 vlan 999
 name v999
interface FastEthernet0/1
switchport mode trunk
interface FastEthernet1/1
switchport mode access
 switchport access vlan 60
interface FastEthernet2/1
switchport mode access
 switchport access vlan 60
interface FastEthernet3/1
switchport mode access
 switchport access vlan 60
```

Switch Phòng A211:

```
 conf ter
 vlan 40
 name v40
 vlan 50
 name v50
 vlan 60
 name v60
 vlan 999
 name v999
interface FastEthernet0/1
switchport mode trunk
```

interface FastEthernet1/1
switchport mode access
 switchport access vlan 40
interface FastEthernet2/1
switchport mode access
 switchport access vlan 40
interface FastEthernet3/1
switchport mode access
 switchport access vlan 40

Switch Phòng A212:

 conf ter
 vlan 40
 name v40
 vlan 50
 name v50
 vlan 60
 name v60
 vlan 999
 name v999
interface FastEthernet0/1
switchport mode trunk
interface FastEthernet1/1
switchport mode access
 switchport access vlan 50
interface FastEthernet2/1
switchport mode access
 switchport access vlan 50
interface FastEthernet3/1
switchport mode access
 switchport access vlan 50

Switch Phòng A213:

 conf ter
 vlan 40
 name v40
 vlan 50
 name v50
 vlan 60
 name v60
 vlan 999
 name v999
interface FastEthernet0/1

switchport mode trunk
interface FastEthernet1/1
switchport mode access
 switchport access vlan 60
interface FastEthernet2/1
switchport mode access
 switchport access vlan 60
interface FastEthernet3/1
switchport mode access
 switchport access vlan 60

Multilayer Switch CN3-1:

 conf ter
 vlan 70
 name v70
 vlan 80
 name v80
 vlan 90
 name v90
 vlan 999
 name v999

ipv6 unicast-routing
interface Vlan70
ip address 192.168.70.1 255.255.255.0
ip helper-address 192.168.3.5
ipv6 enable
ipv6 address 2001:DB8:CAFE:A70::1/64
interface Vlan80
ip address 192.168.80.1 255.255.255.0
ip helper-address 192.168.3.5
ipv6 enable
ipv6 address 2001:DB8:CAFE:A80::1/64
interface Vlan90
ip address 192.168.90.1 255.255.255.0
ip helper-address 192.168.3.5
ipv6 enable
ipv6 address 2001:DB8:CAFE:A90::1/64
interface Vlan999
ip address 192.168.3.1 255.255.255.0
interface FastEthernet0/1
no switchport
ip address 192.168.130.2 255.255.255.0
ipv6 enable
ipv6 address 2001:DB8:CAFE:C1::2/64

interface FastEthernet0/2
switchport trunk encapsulation dot1q
switchport mode trunk
interface FastEthernet0/3
switchport trunk encapsulation dot1q
switchport mode trunk
interface FastEthernet0/4
switchport trunk encapsulation dot1q
switchport mode trunk
ip routing

Multilayer Switch CN3-2:

conf ter
vlan 70
name v70
vlan 80
name v80
vlan 90
name v90
vlan 999
name v999

ipv6 unicast-routing
interface Vlan70
ip address 192.168.70.1 255.255.255.0
ip helper-address 192.168.3.5
ipv6 enable
ipv6 address 2001:DB8:CAFE:A70::1/64
interface Vlan80
ip address 192.168.80.1 255.255.255.0
ip helper-address 192.168.3.5
ipv6 enable
ipv6 address 2001:DB8:CAFE:A80::1/64
interface Vlan90
ip address 192.168.90.1 255.255.255.0
ip helper-address 192.168.3.5
ipv6 enable
ipv6 address 2001:DB8:CAFE:A90::1/64
interface Vlan999
ip address 192.168.3.2 255.255.255.0
interface FastEthernet0/1
no switchport
ip address 192.168.140.2 255.255.255.0
ipv6 address 2001:DB8:CAFE:C2::2/64
interface FastEthernet0/2

```
switchport trunk encapsulation dot1q
switchport mode trunk
interface FastEthernet0/3
switchport trunk encapsulation dot1q
switchport mode trunk
interface FastEthernet0/4
switchport trunk encapsulation dot1q
switchport mode trunk
ip routing
```

Switch Tầng 1:

```
 conf ter
 vlan 70
 name v70
 vlan 80
 name v80
 vlan 90
 name v90
 vlan 999
 name v999
interface FastEthernet0/1
switchport mode trunk
interface FastEthernet0/2
switchport mode trunk
interface FastEthernet0/3
switchport mode trunk
interface FastEthernet0/4
switchport mode trunk
```

Switch Tầng 2:

```
 conf ter
 vlan 70
 name v70
 vlan 80
 name v80
 vlan 90
 name v90
 vlan 999
 name v999
interface FastEthernet0/1
switchport mode trunk
interface FastEthernet0/2
switchport mode trunk
```

interface FastEthernet0/3
switchport mode trunk
interface FastEthernet0/4
switchport mode trunk

Switch Phòng B101:
 conf ter
 vlan 70
 name v70
 vlan 80
 name v80
 vlan 90
 name v90
 vlan 999
 name v999
interface FastEthernet0/1
switchport mode trunk
interface FastEthernet0/2
switchport mode access
 switchport access vlan 70
interface FastEthernet0/3
switchport mode access
 switchport access vlan 70

 conf ter
 vlan 70
 name v70
 vlan 80
 name v80
 vlan 90
 name v90
 vlan 999
 name v999
interface FastEthernet0/1
switchport mode trunk
interface FastEthernet1/1
switchport mode access
 switchport access vlan 70
interface FastEthernet2/1
switchport mode access
 switchport access vlan 70
interface FastEthernet3/1
switchport mode access
 switchport access vlan 70

Switch Tầng 2:

```
 conf ter
 vlan 70
 name v70
 vlan 80
 name v80
 vlan 90
 name v90
 vlan 999
 name v999
interface FastEthernet0/1
switchport mode trunk
interface FastEthernet1/1
switchport mode access
 switchport access vlan 80
interface FastEthernet2/1
switchport mode access
 switchport access vlan 80
interface FastEthernet3/1
switchport mode access
 switchport access vlan 80
```

Switch Phòng B211:

```
 conf ter
 vlan 70
 name v70
 vlan 80
 name v80
 vlan 90
 name v90
 vlan 999
 name v999
interface FastEthernet0/1
switchport mode trunk
interface FastEthernet1/1
switchport mode access
 switchport access vlan 70
interface FastEthernet2/1
switchport mode access
 switchport access vlan 70
interface FastEthernet3/1
switchport mode access
 switchport access vlan 70
```

Switch Phòng B212:

```
 conf ter
 vlan 70
 name v70
 vlan 80
 name v80
 vlan 90
 name v90
 vlan 999
 name v999
interface FastEthernet0/1
switchport mode trunk
interface FastEthernet1/1
switchport mode access
 switchport access vlan 80
interface FastEthernet2/1
switchport mode access
 switchport access vlan 80
interface FastEthernet3/1
switchport mode access
 switchport access vlan 80
```

Switch Phòng B213:

```
 conf ter
 vlan 70
 name v70
 vlan 80
 name v80
 vlan 90
 name v90
 vlan 999
 name v999
interface FastEthernet0/1
switchport mode trunk
interface FastEthernet1/1
switchport mode access
 switchport access vlan 90
interface FastEthernet2/1
switchport mode access
 switchport access vlan 90
interface FastEthernet3/1
switchport mode access
 switchport access vlan 90
```

Router chi nhánh 1

```
ip uncast-routing
interface FastEthernet0/0
ip address 192.168.123.1 255.255.255.0
interface FastEthernet0/1
ip address 192.168.110.1 255.255.255.0
ipv6 address FE80::1 link-local
ipv6 address 2001:DB8:CAFE:A1::1/64
interface Serial1/0
ip address 10.0.0.1 255.0.0.0
ipv6 address 2001:DB8:ACAD:D1::1/64
interface Serial1/1
ip address 8.0.0.1 255.0.0.0
ipv6 address 2001:DB8:ACAD:D2::1/64
```

Router chi nhánh 2

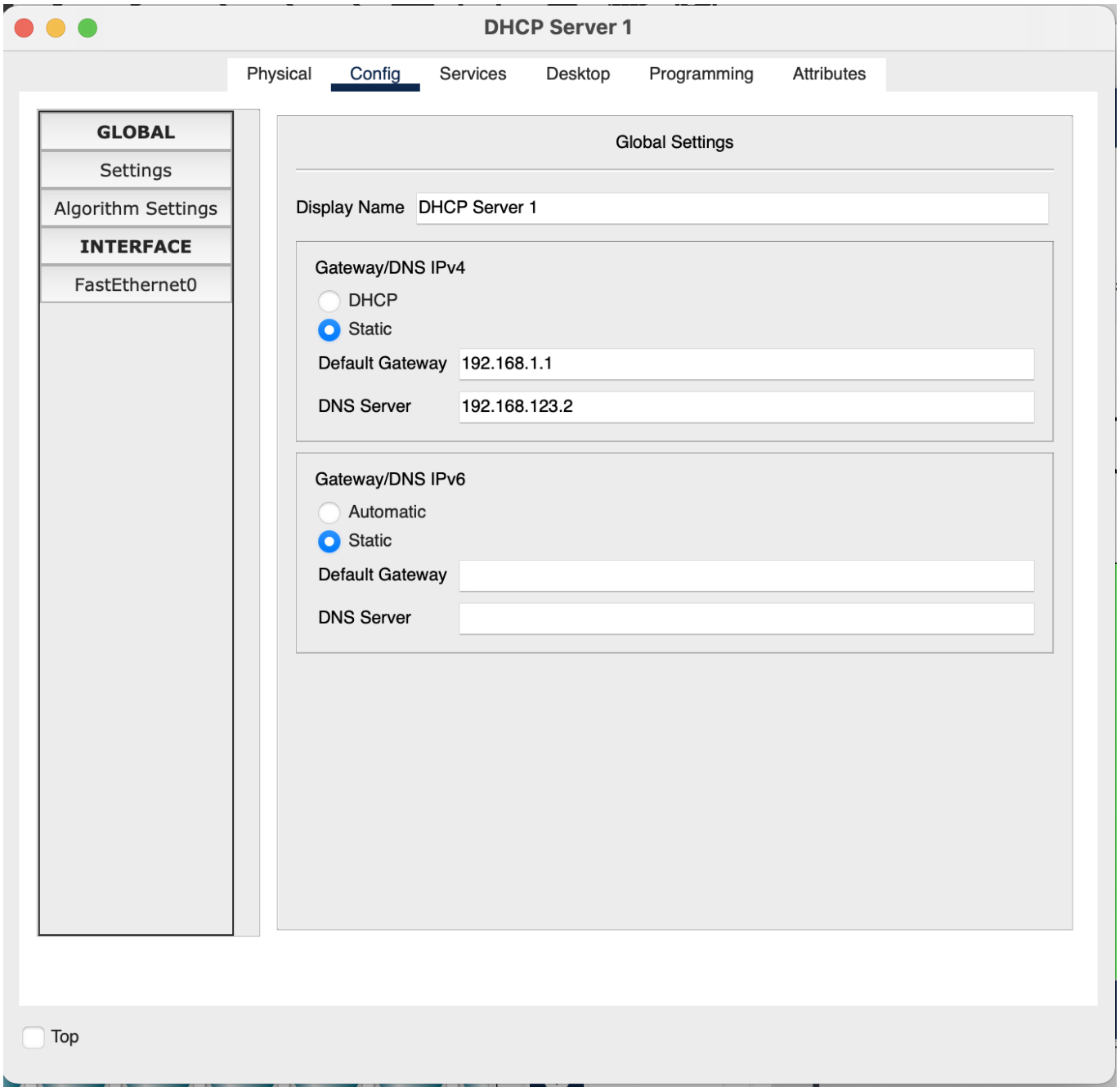
```
ip uncast-routing
interface FastEthernet0/1
ip address 192.168.120.1 255.255.255.0        ipv6 address FE80::1 link-local
ipv6 address 2001:DB8:CAFE:B1::1/64
interface Serial1/0
ip address 10.0.0.2 255.0.0.0
ipv6 address 2001:DB8:ACAD:D1::2/64
interface Serial1/1
ip address 9.0.0.1 255.0.0.0
ipv6 address 2001:DB8:ACAD:D3::1/64
```

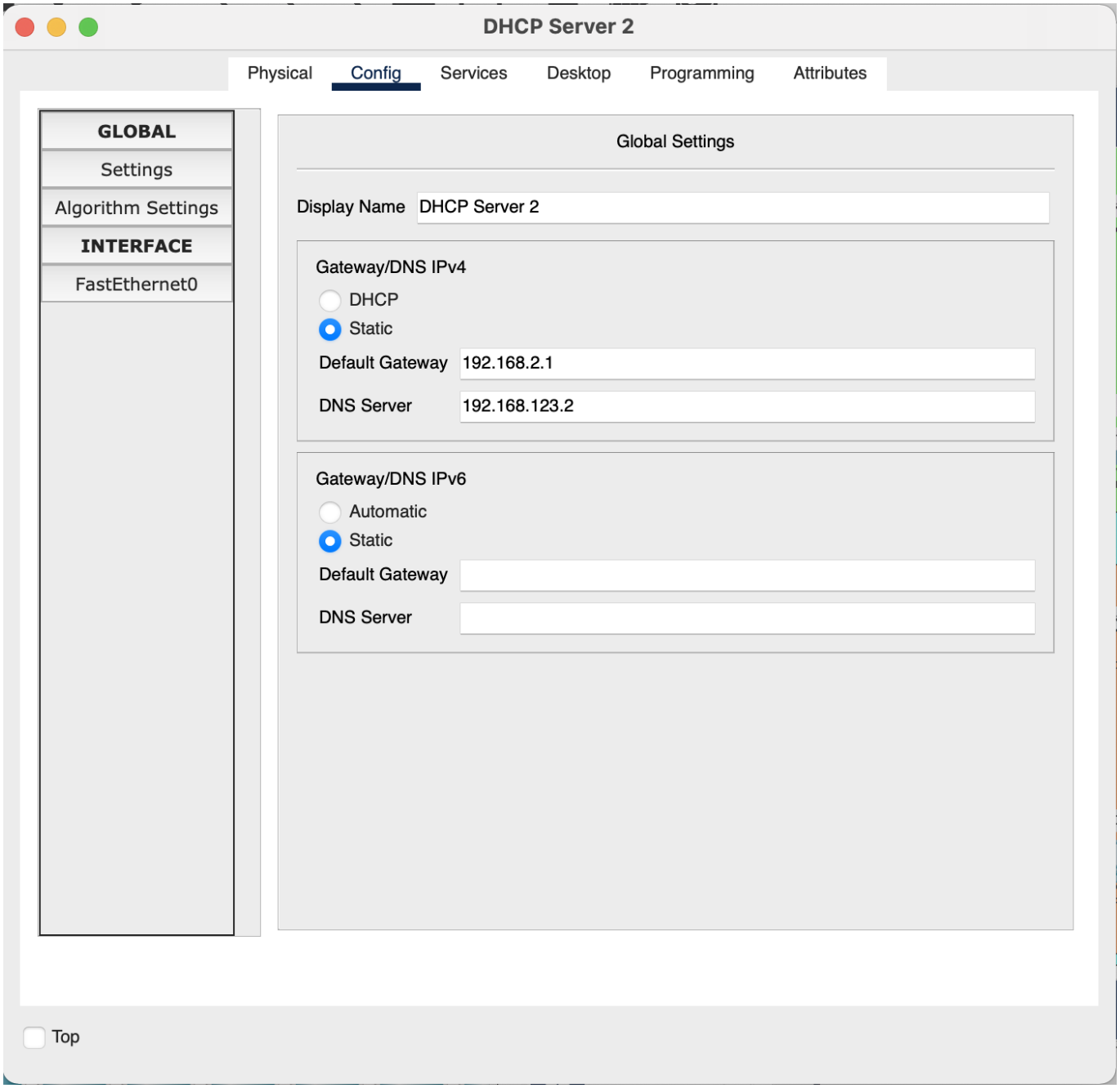
Router chi nhánh 3

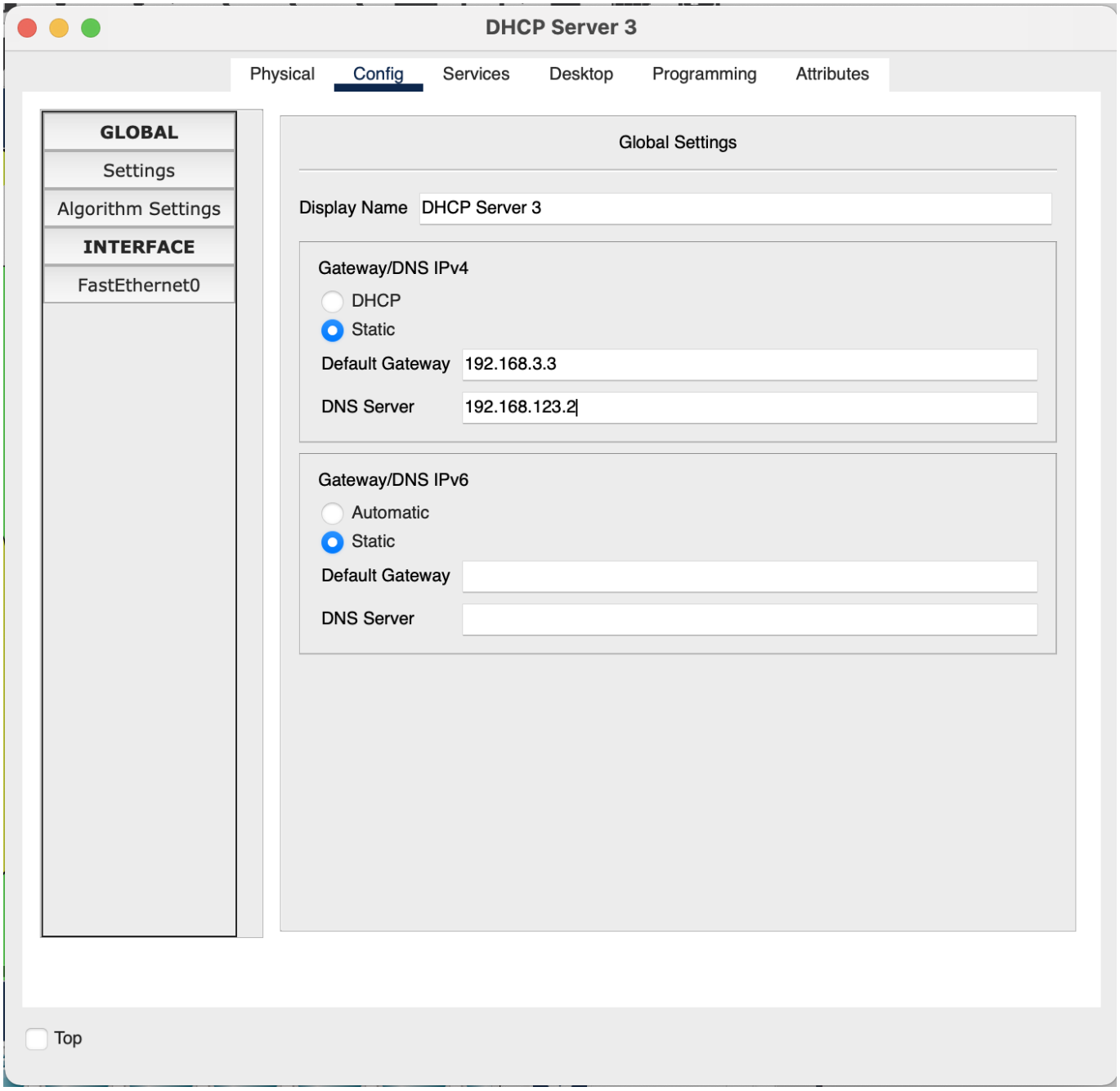
```
ip uncast-routing
interface FastEthernet0/0
ip address 192.168.140.1 255.255.255.0
ipv6 address FE80::1 link-local
ipv6 address 2001:DB8:CAFE:C2::1/64
interface FastEthernet0/1
ip address 192.168.130.1 255.255.255.0
ipv6 address FE80::1 link-local
ipv6 address 2001:DB8:CAFE:C1::1/64
interface Serial1/0
ip address 8.0.0.2 255.0.0.0
ipv6 address 2001:DB8:ACAD:D2::2/64
interface Serial1/1
ip address 9.0.0.2 255.0.0.0
ipv6 address 2001:DB8:ACAD:D3::2/64
```

4.2 Cấu hình Server

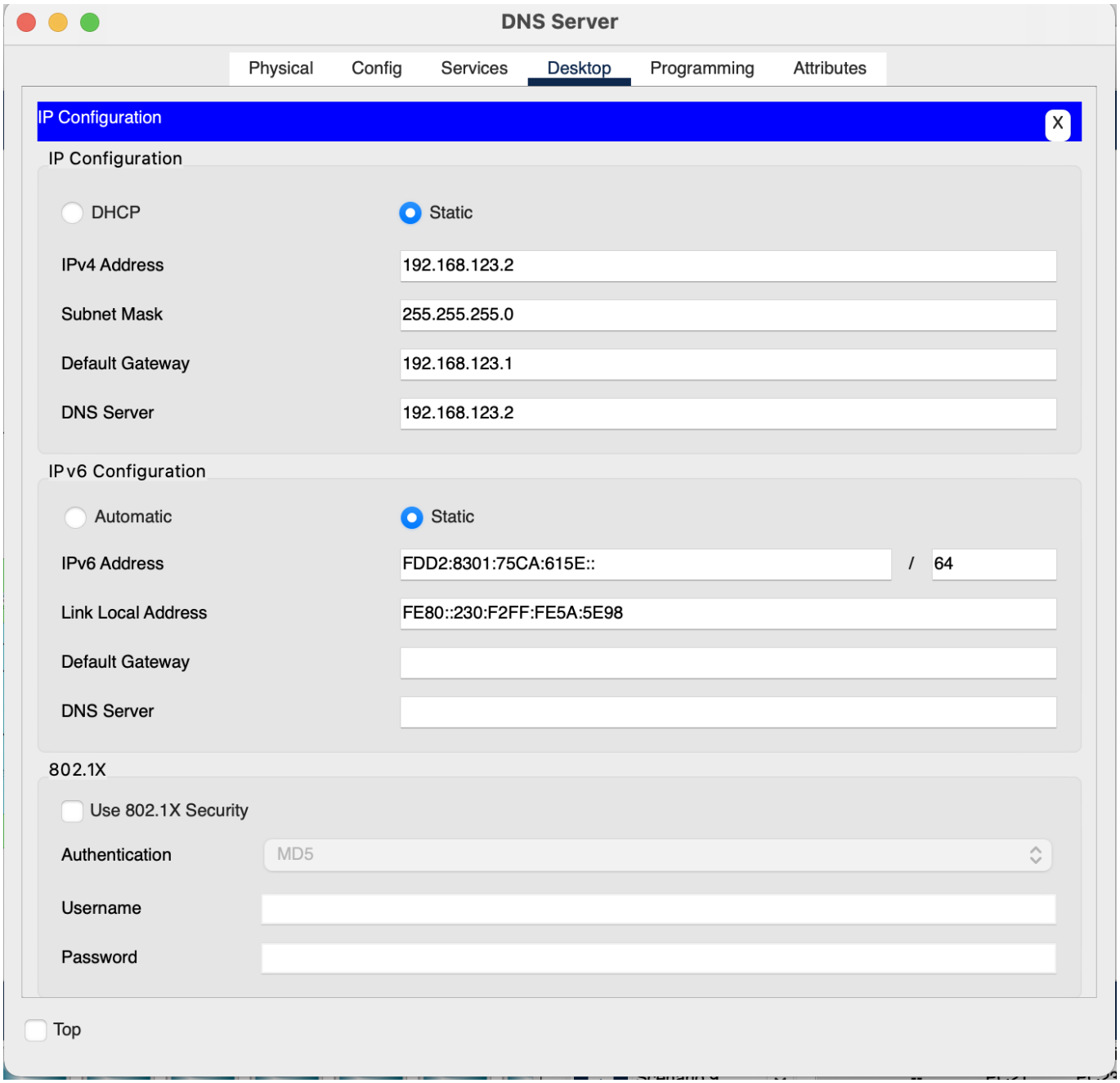
4.2.1 DHCP server




DHCP Server 2
Physical
Config
Services
Desktop
Programming
Attributes
GLOBAL
Settings
Algorithm Settings
INTERFACE
FastEthernet0
Global Settings
Display Name
DHCP Server 2
Gateway/DNS IPv4
DHCP
Static
Default Gateway
192.168.2.1
DNS Server
192.168.123.2
Gateway/DNS IPv6
Automatic
Static
Default Gateway
DNS Server
Top

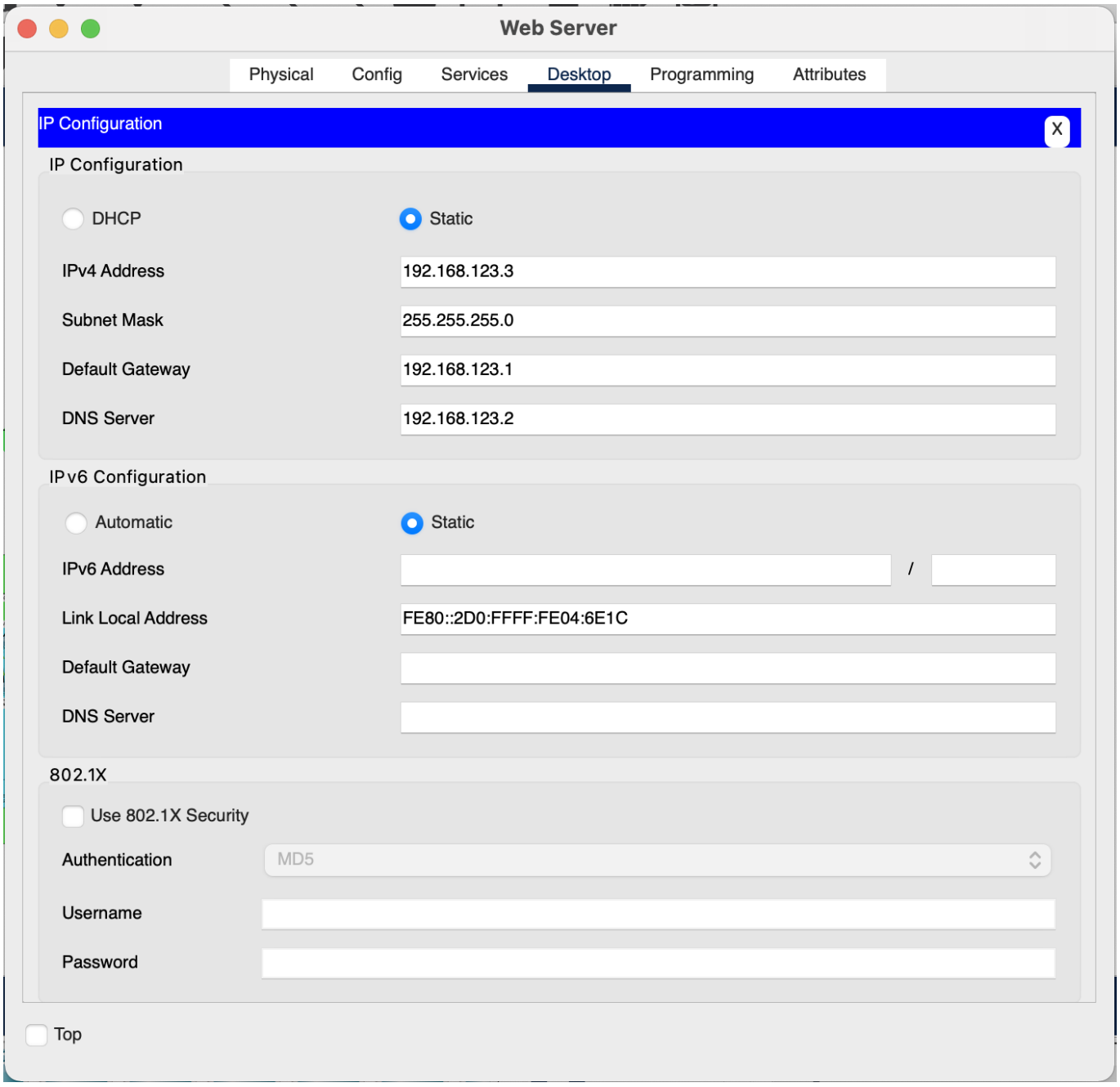

DHCP Server 3
Physical
Config
Services
Desktop
Programming
Attributes
GLOBAL
Settings
Algorithm Settings
INTERFACE
FastEthernet0
Global Settings
Display Name
DHCP Server 3
Gateway/DNS IPv4
DHCP
Static
Default Gateway
192.168.3.3
DNS Server
192.168.123.2
Gateway/DNS IPv6
Automatic
Static
Default Gateway
DNS Server
Top

4.2.2 DNS server

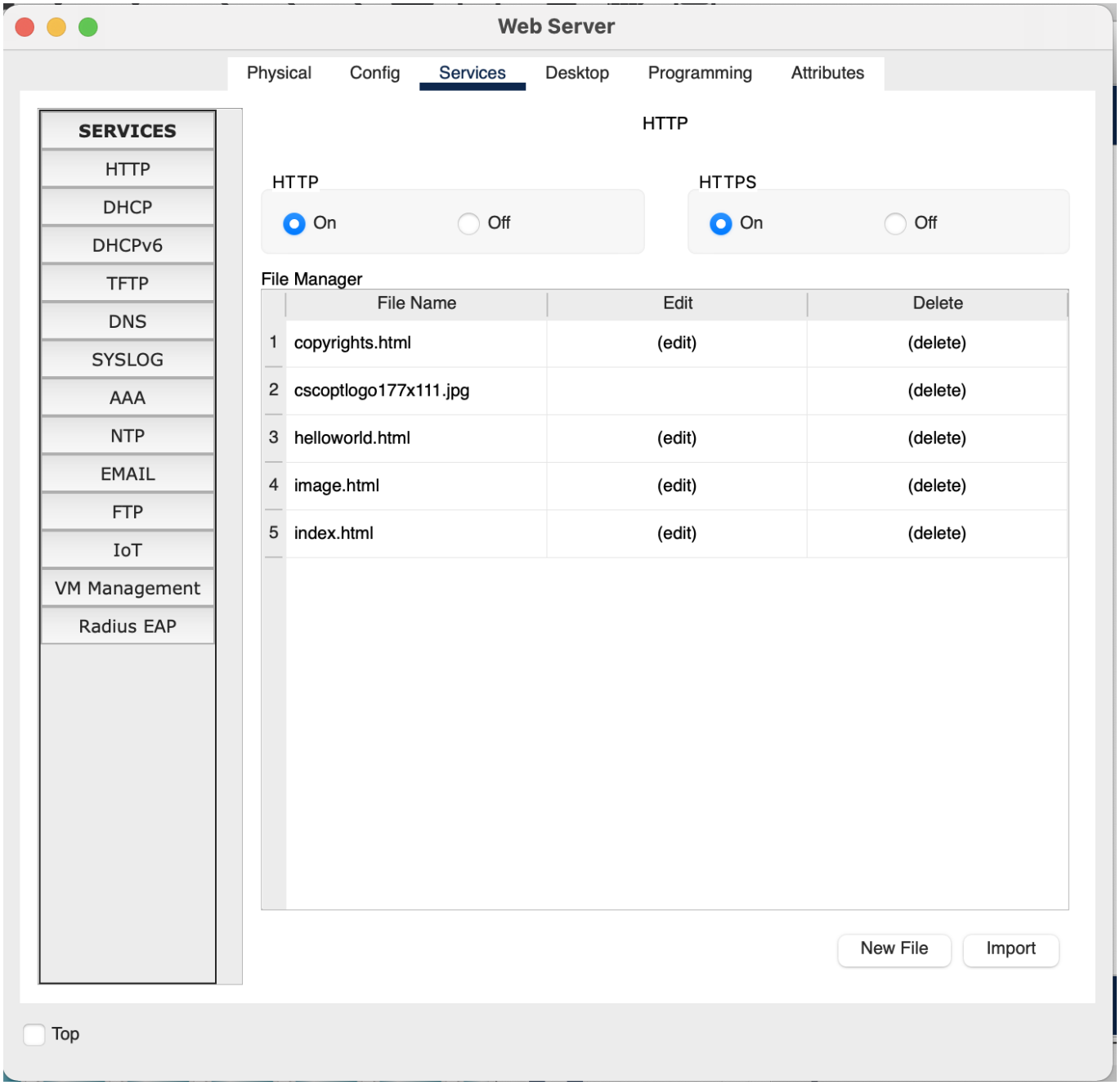


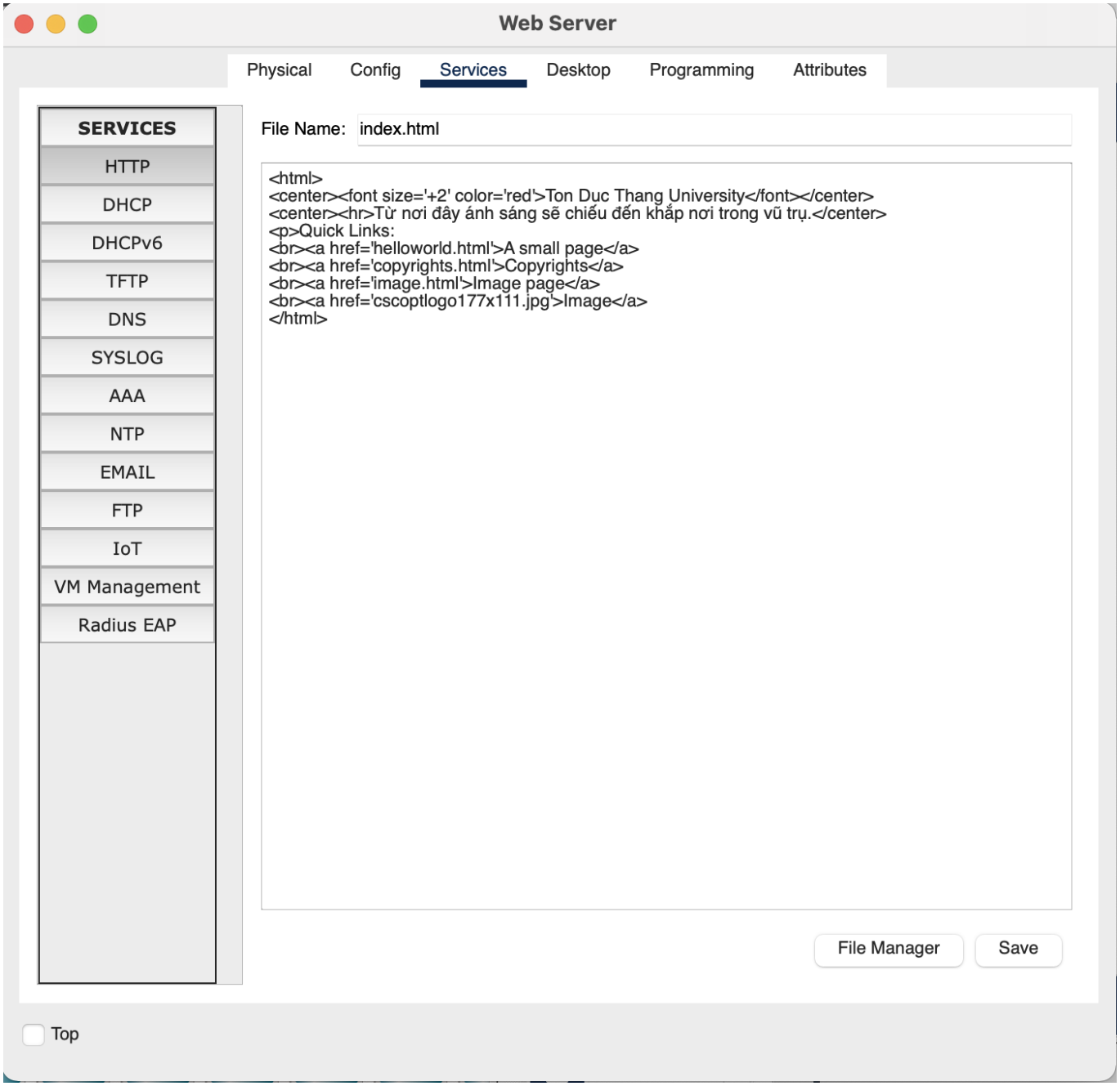
4.2.3 Web server và dịch vụ web

*Cấu hình WEB



*Các dịch vụ của WEB Server



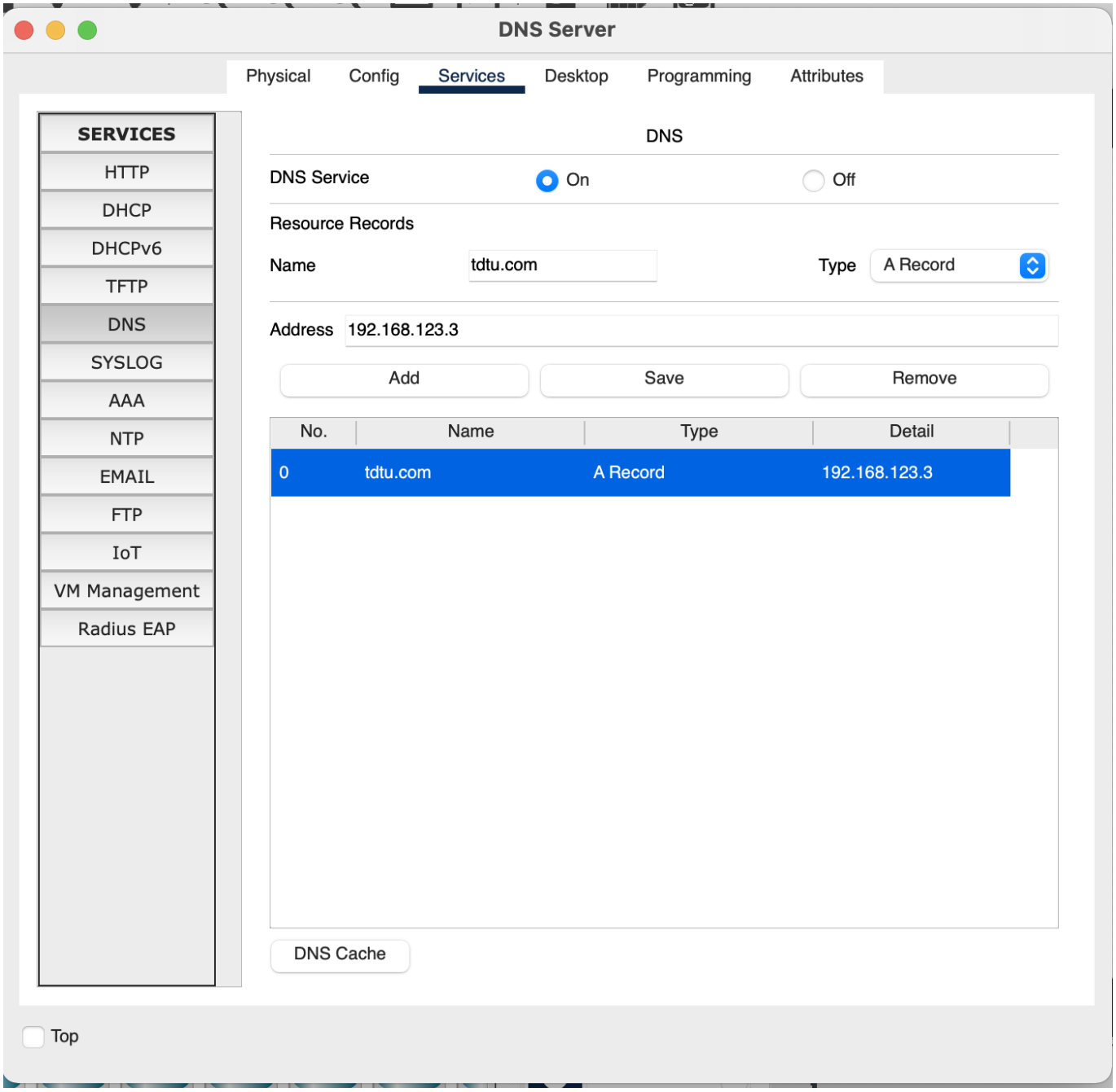

Web Server
Physical
Config
Services
Desktop
Programming
Attributes
SERVICES
HTTP
DHCP
DHCPv6
TFTP
DNS
SYSLOG
AAA
NTP
EMAIL
FTP
IoT
VM Management
Radius EAP
File Name: index.html
<html>
Ton Duc Thang University
<hr>Từ nơi đây ánh sáng sẽ chiếu đến khắp nơi trong vũ trụ.
<p>Quick Links:

A small page

Copyrights

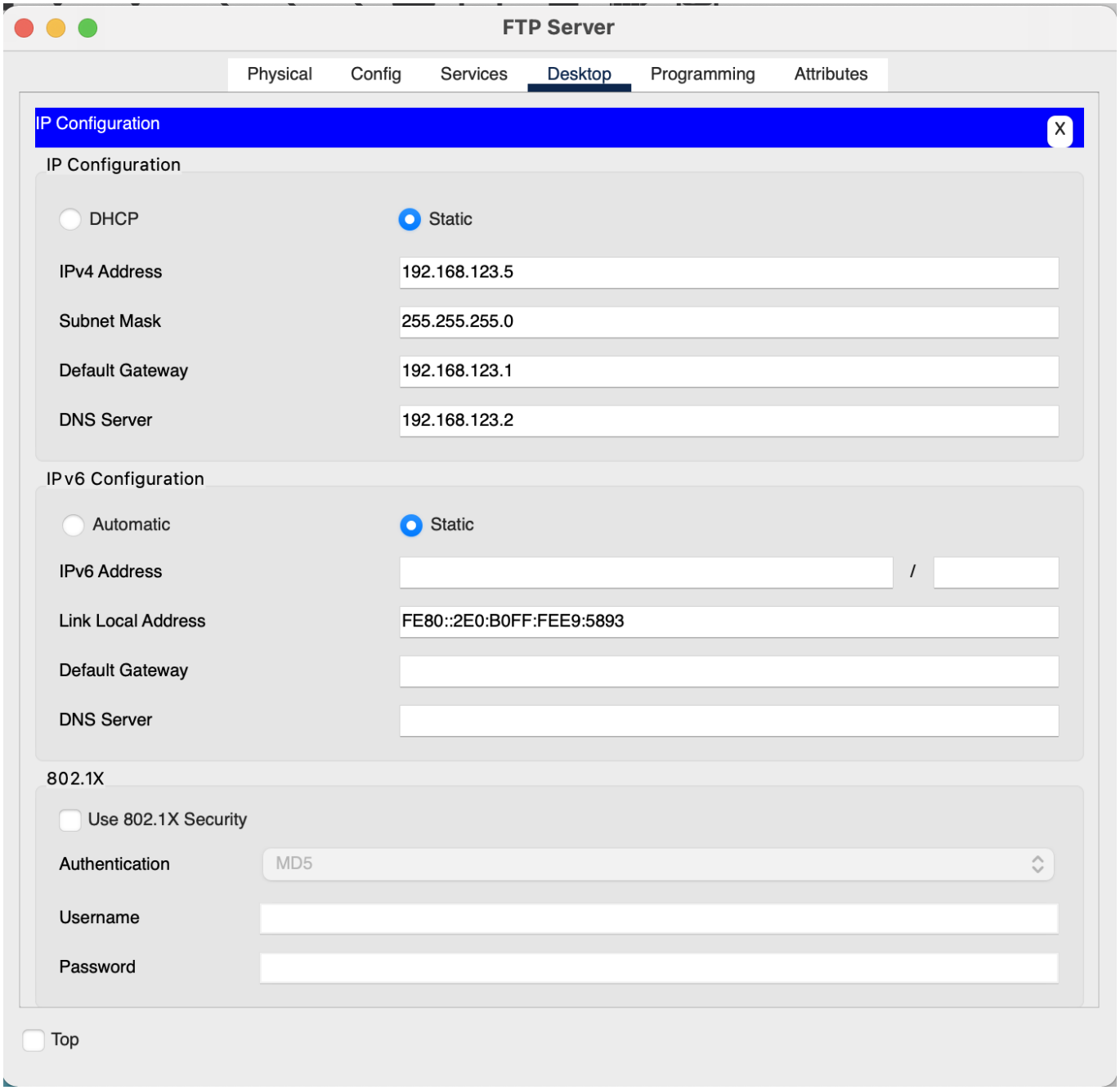
Image page

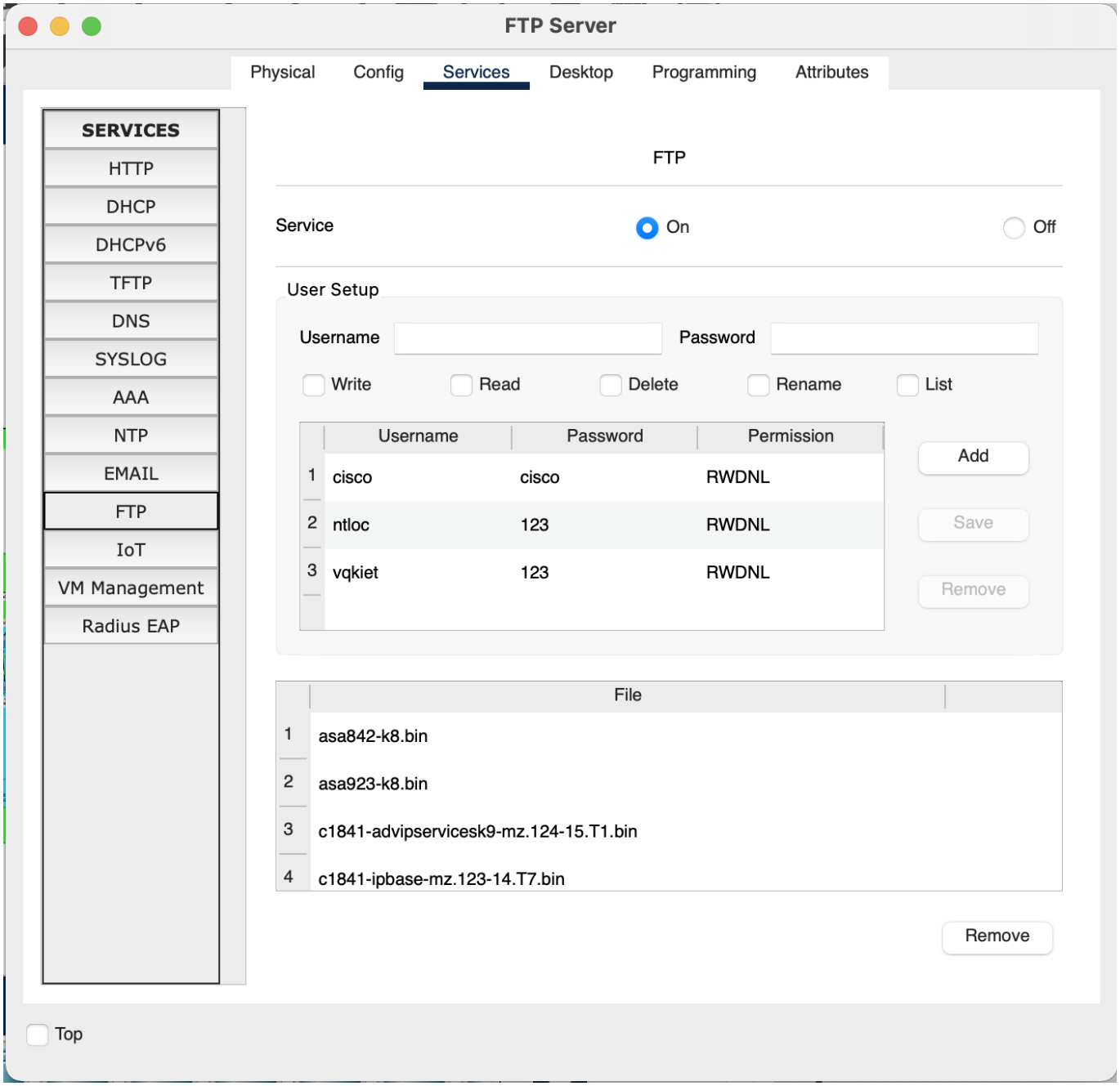
Image
</html>
File Manager
Save
Top

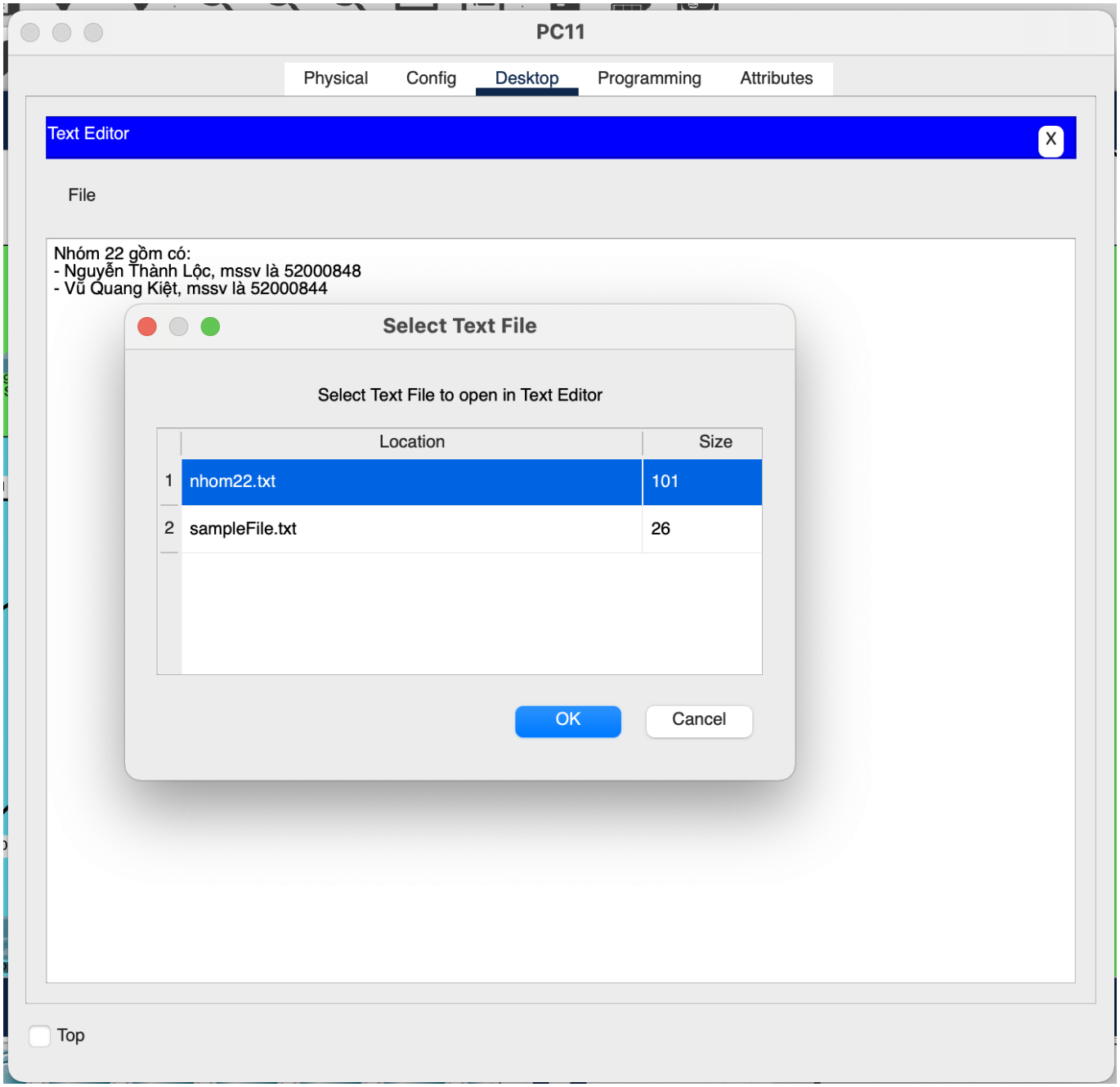

DNS Server
Physical
Config
Services
Desktop
Programming
Attributes
SERVICES
HTTP
DHCP
DHCPv6
TFTP
DNS
SYSLOG
AAA
NTP
EMAIL
FTP
IoT
VM Management
Radius EAP
DNS
DNS Service
On
Off
Resource Records
Name
tdtu.com
Type
A Record
Address
192.168.123.3
Add
Save
Remove
No.
Name
Type
Detail
0
tdtu.com
A Record
192.168.123.3
DNS Cache
Top

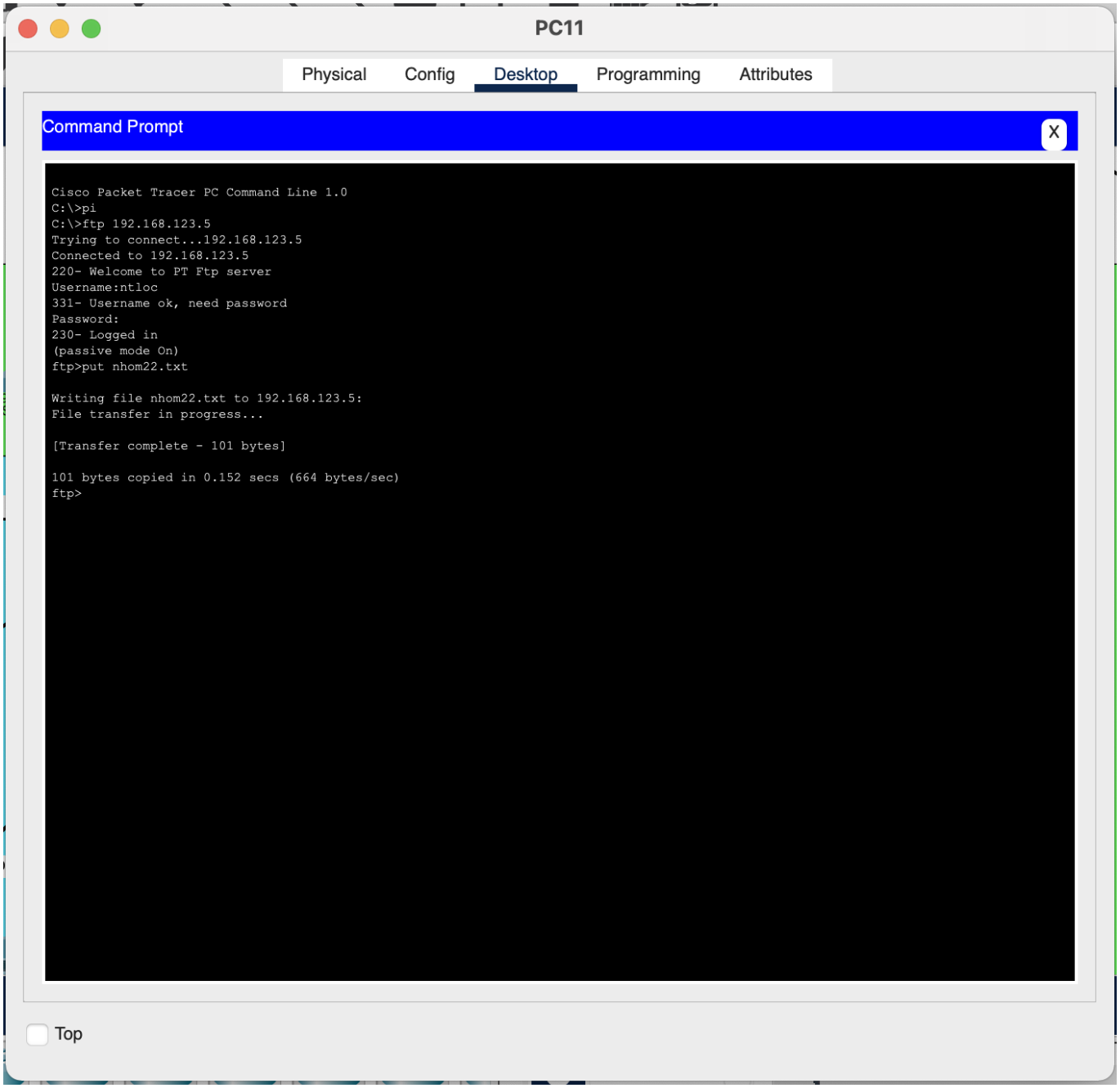
4.2.4 FTP server

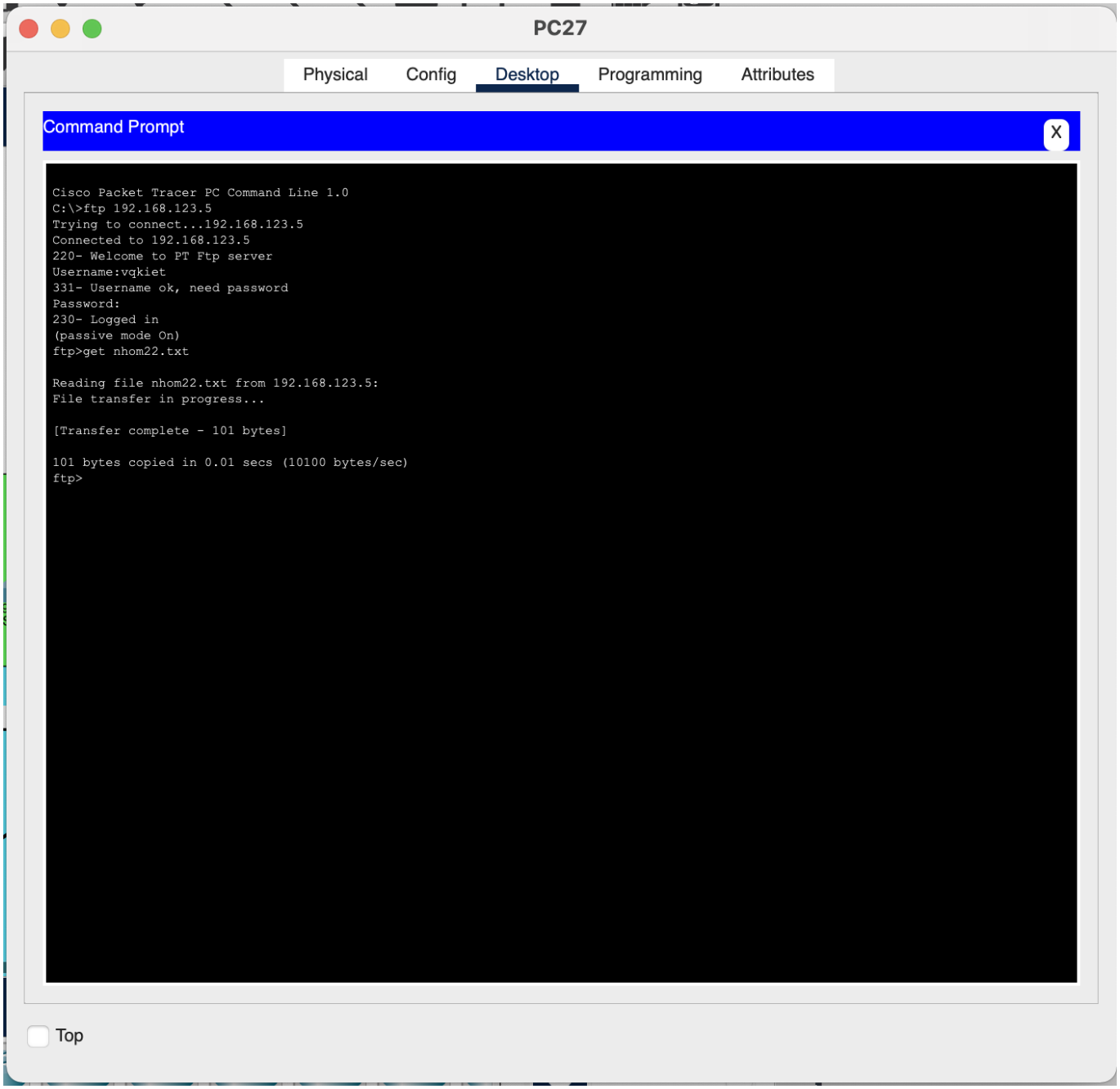
*Cấu hình FTP Server

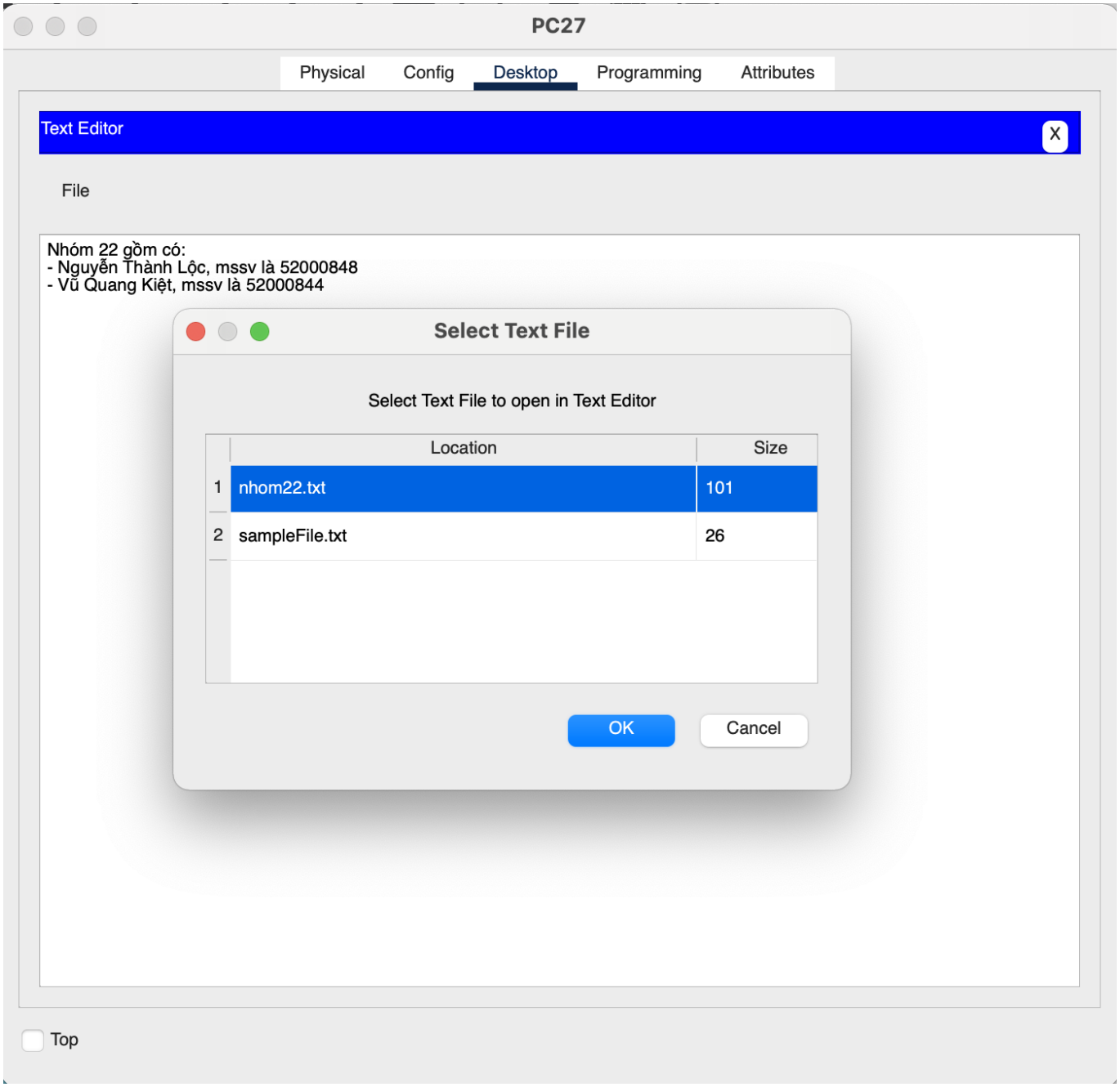



FTP Server
Physical
Config
Services
Desktop
Programming
Attributes
SERVICES
HTTP
DHCP
DHCPv6
TFTP
DNS
SYSLOG
AAA
NTP
EMAIL
FTP
IoT
VM Management
Radius EAP
FTP
Service
On
Off
User Setup
Username
Password
Write
Read
Delete
Rename
List
Username
Password
Permission
1 cisco cisco RWDNL
2 ntloc 123 RWDNL
3 vqkiet 123 RWDNL
Add
Save
Remove
File
1 asa842-k8.bin
2 asa923-k8.bin
3 c1841-advipservicesk9-mz.124-15.T1.bin
4 c1841-ipbase-mz.123-14.T7.bin
Remove
Top


PC11
Physical
Config
Desktop
Programming
Attributes
Text Editor
X
File
Nhóm 22 gồm có:
- Nguyễn Thành Lộc, mssv là 52000848
- Vũ Quang Kiệt, mssv là 52000844
Select Text File
Select Text File to open in Text Editor
Location
Size
1
nhom22.txt
101
2
sampleFile.txt
26
OK
Cancel
Top

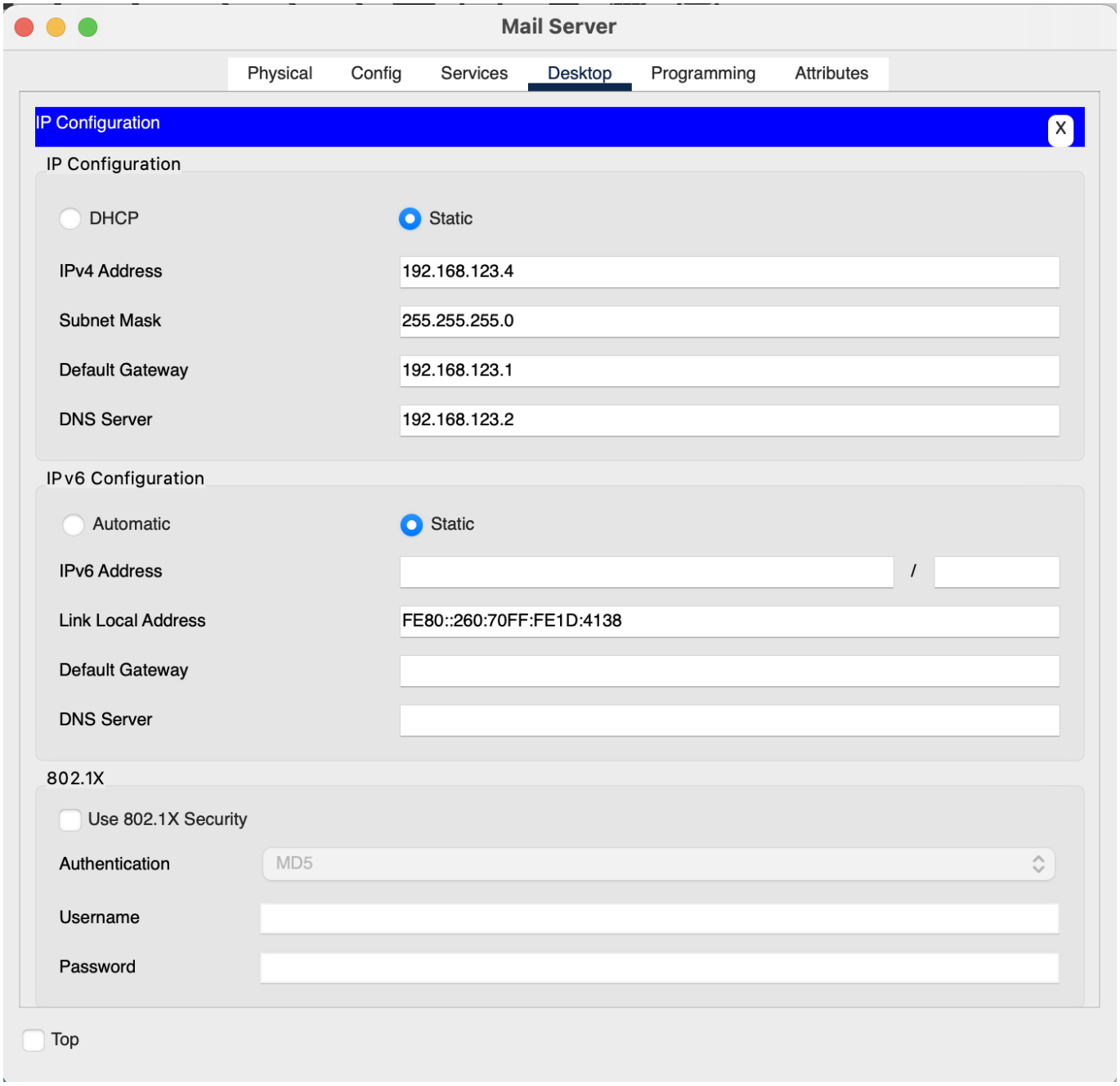

PC11
Physical
Config
Desktop
Programming
Attributes
Command Prompt
X
Cisco Packet Tracer PC Command Line 1.0
C:\>pi
C:\>ftp 192.168.123.5
Trying to connect...192.168.123.5
Connected to 192.168.123.5
220- Welcome to PT Ftp server
Username:ntloc
331- Username ok, need password
Password:
230- Logged in
(passive mode On)
ftp>put nhom22.txt
Writing file nhom22.txt to 192.168.123.5:
File transfer in progress...
[Transfer complete - 101 bytes]
101 bytes copied in 0.152 secs (664 bytes/sec)
ftp>
Top

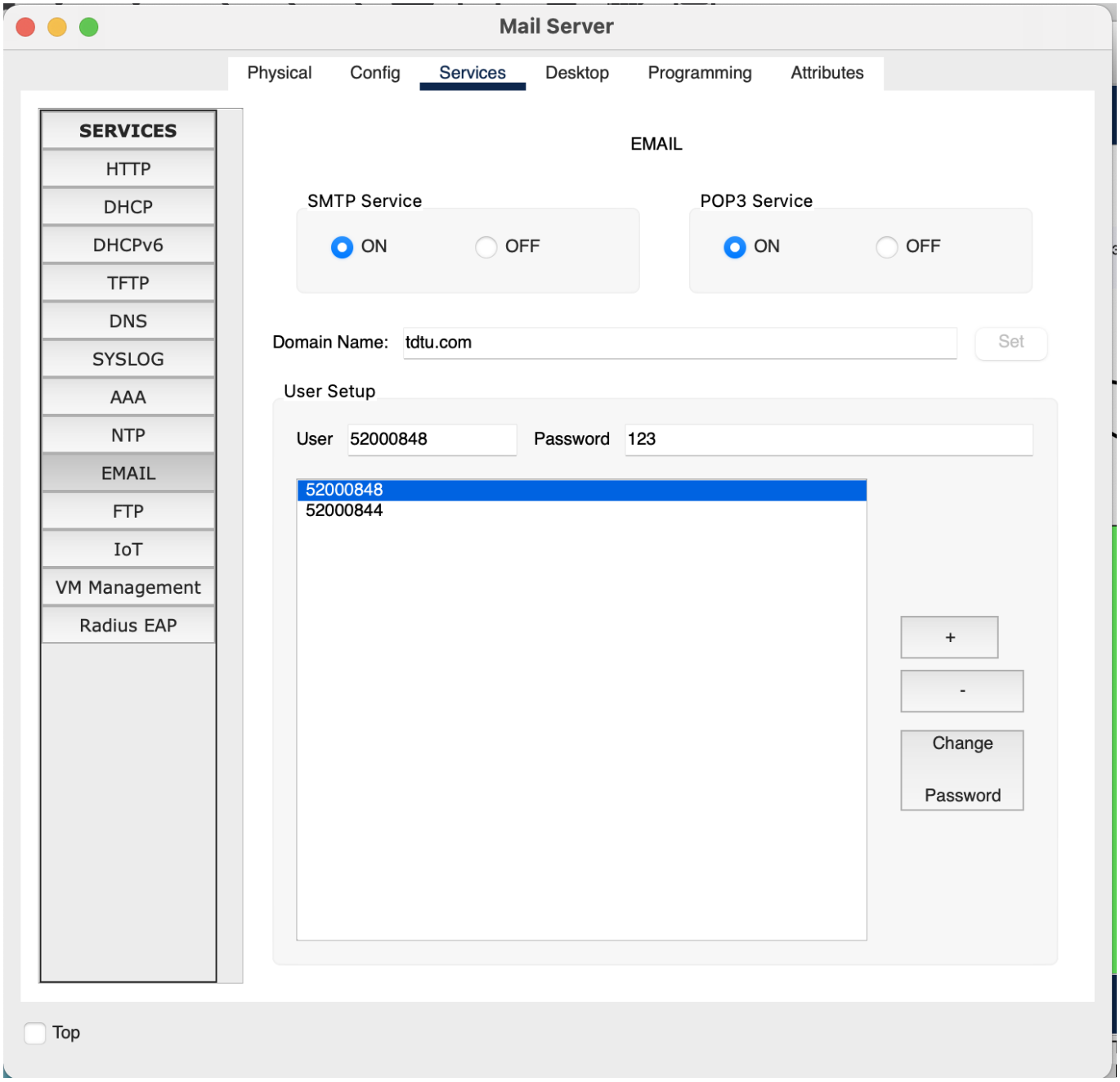

PC27
Physical
Config
Desktop
Programming
Attributes
Command Prompt
X
Cisco Packet Tracer PC Command Line 1.0
C:\>ftp 192.168.123.5
Trying to connect...192.168.123.5
Connected to 192.168.123.5
220- Welcome to PT Ftp server
Username:vqkiet
331- Username ok, need password
Password:
230- Logged in
(passive mode On)
ftp>get nhom22.txt
Reading file nhom22.txt from 192.168.123.5:
File transfer in progress...
[Transfer complete - 101 bytes]
101 bytes copied in 0.01 secs (10100 bytes/sec)
ftp>
Top

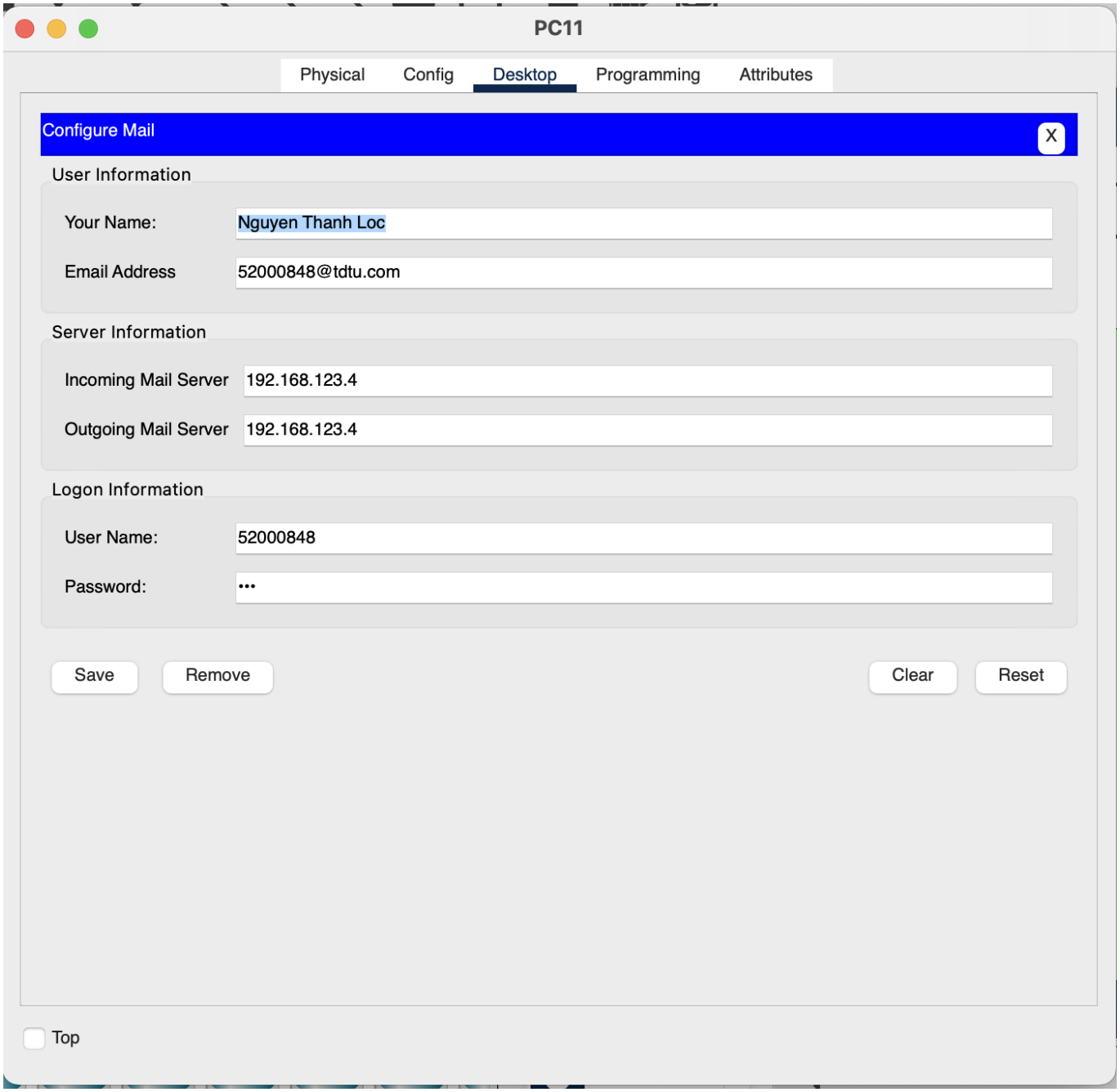

PC27
Physical
Config
Desktop
Programming
Attributes
Text Editor
X
File
Nhóm 22 gồm có:
- Nguyễn Thành Lộc, mssv là 52000848
- Vũ Quang Kiệt, mssv là 52000844
Select Text File
Select Text File to open in Text Editor
Location
Size
1
nhom22.txt
101
2
sampleFile.txt
26
OK
Cancel
Top

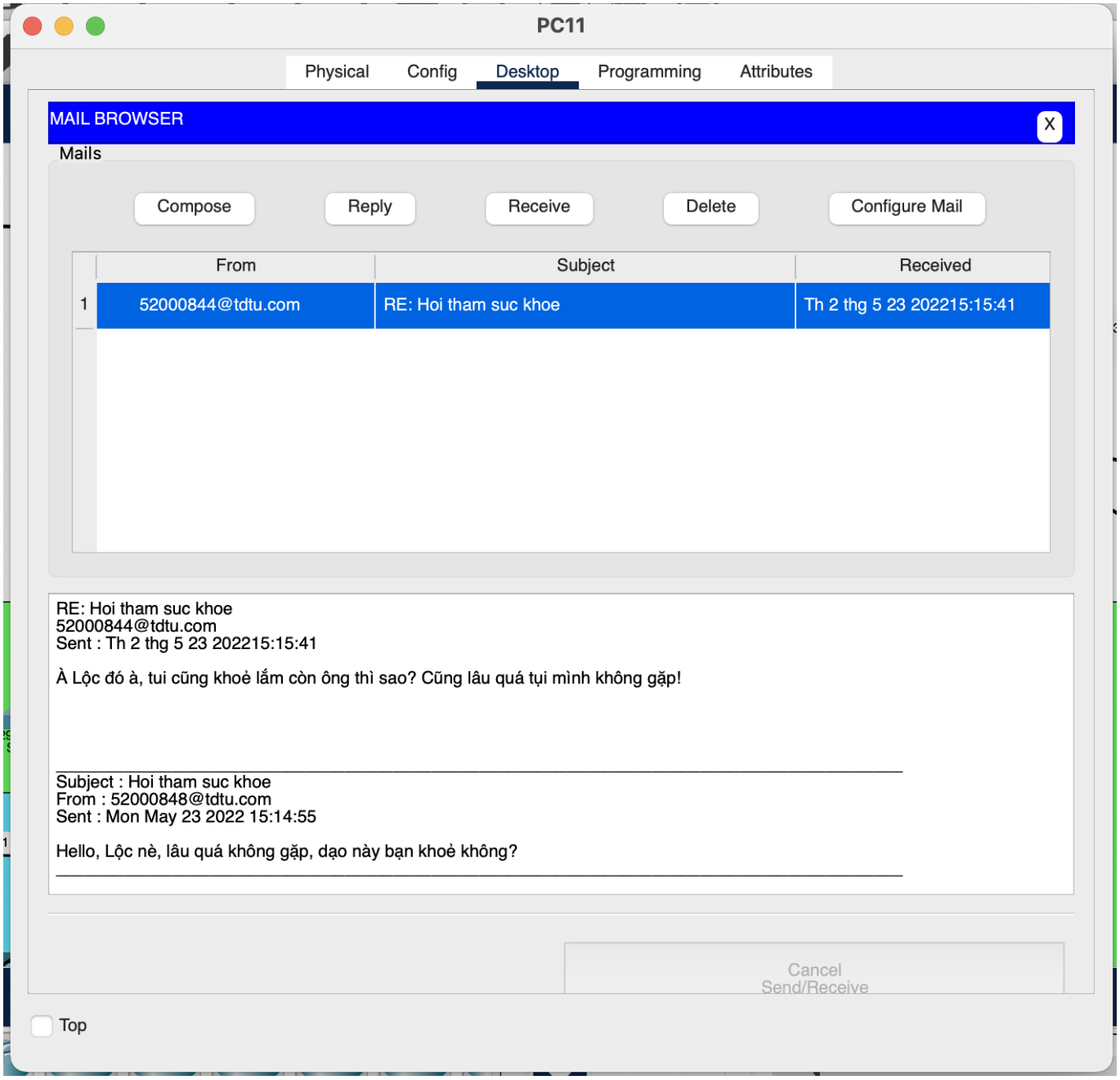
4.2.5 Mail server

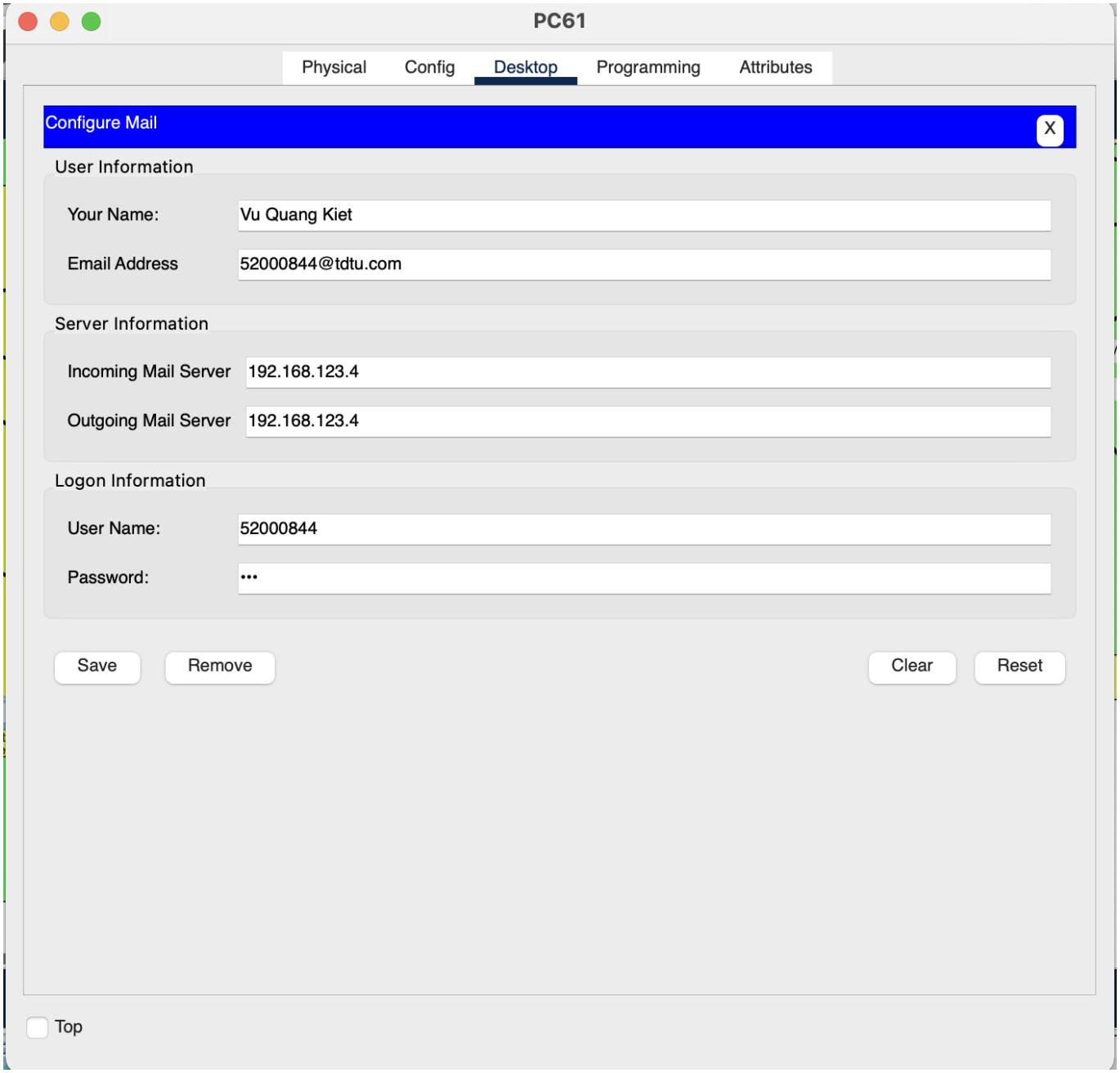
*Cấu hình Mail Server

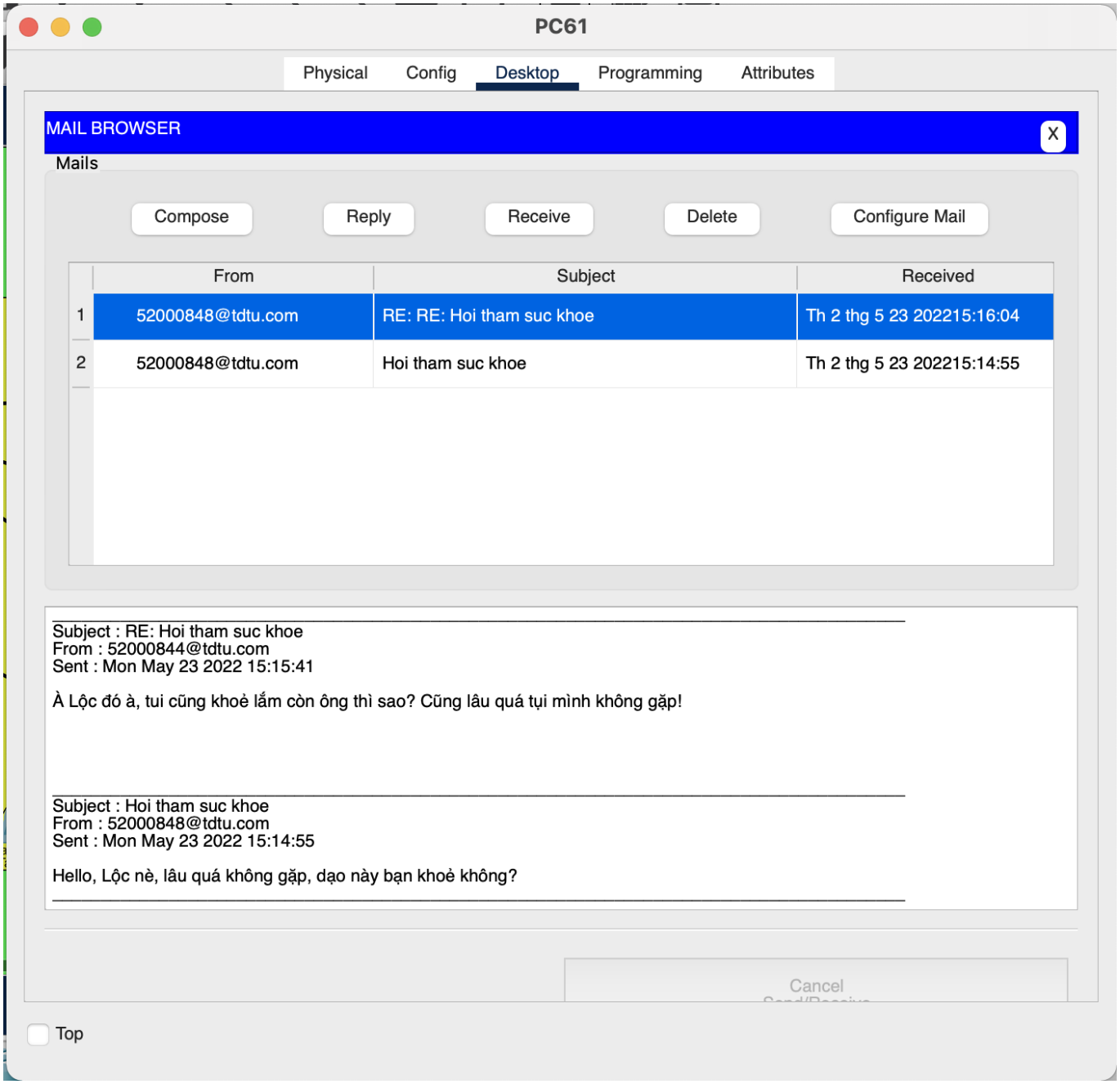



Mail Server
Physical
Config
Services
Desktop
Programming
Attributes
SERVICES
HTTP
DHCP
DHCPv6
TFTP
DNS
SYSLOG
AAA
NTP
EMAIL
FTP
IoT
VM Management
Radius EAP
EMAIL
SMTP Service
ON
OFF
POP3 Service
ON
OFF
Domain Name:
tdtu.com
Set
User Setup
User
52000848
Password
123
52000848
52000844
+
-
Change
Password
Top


PC11
Physical
Config
Desktop
Programming
Attributes
Configure Mail
X
User Information
Your Name:
Nguyen Thanh Loc
Email Address
52000848@tdtu.com
Server Information
Incoming Mail Server
192.168.123.4
Outgoing Mail Server
192.168.123.4
Logon Information
User Name:
52000848
Password:
•••
Save
Remove
Clear
Reset
Top


PC11
Physical
Config
Desktop
Programming
Attributes
MAIL BROWSER
X
Mails
Compose
Reply
Receive
Delete
Configure Mail
From
Subject
Received
1
52000844@tdtu.com
RE: Hoi tham suc khoe
Th 2 thg 5 23 202215:15:41
RE: Hoi tham suc khoe
52000844@tdtu.com
Sent : Th 2 thg 5 23 202215:15:41
À Lộc đó à, tui cũng khoẻ lắm còn ông thì sao? Cũng lâu quá tụi mình không gặp!
Subject : Hoi tham suc khoe
From : 52000848@tdtu.com
Sent : Mon May 23 2022 15:14:55
Hello, Lộc nè, lâu quá không gặp, dạo này bạn khoẻ không?
Cancel
Send/Receive
Top


PC61
Physical
Config
Desktop
Programming
Attributes
Configure Mail
X
User Information
Your Name:
Vu Quang Kiet
Email Address
52000844@tdtu.com
Server Information
Incoming Mail Server
192.168.123.4
Outgoing Mail Server
192.168.123.4
Logon Information
User Name:
52000844
Password:
•••
Save
Remove
Clear
Reset
Top

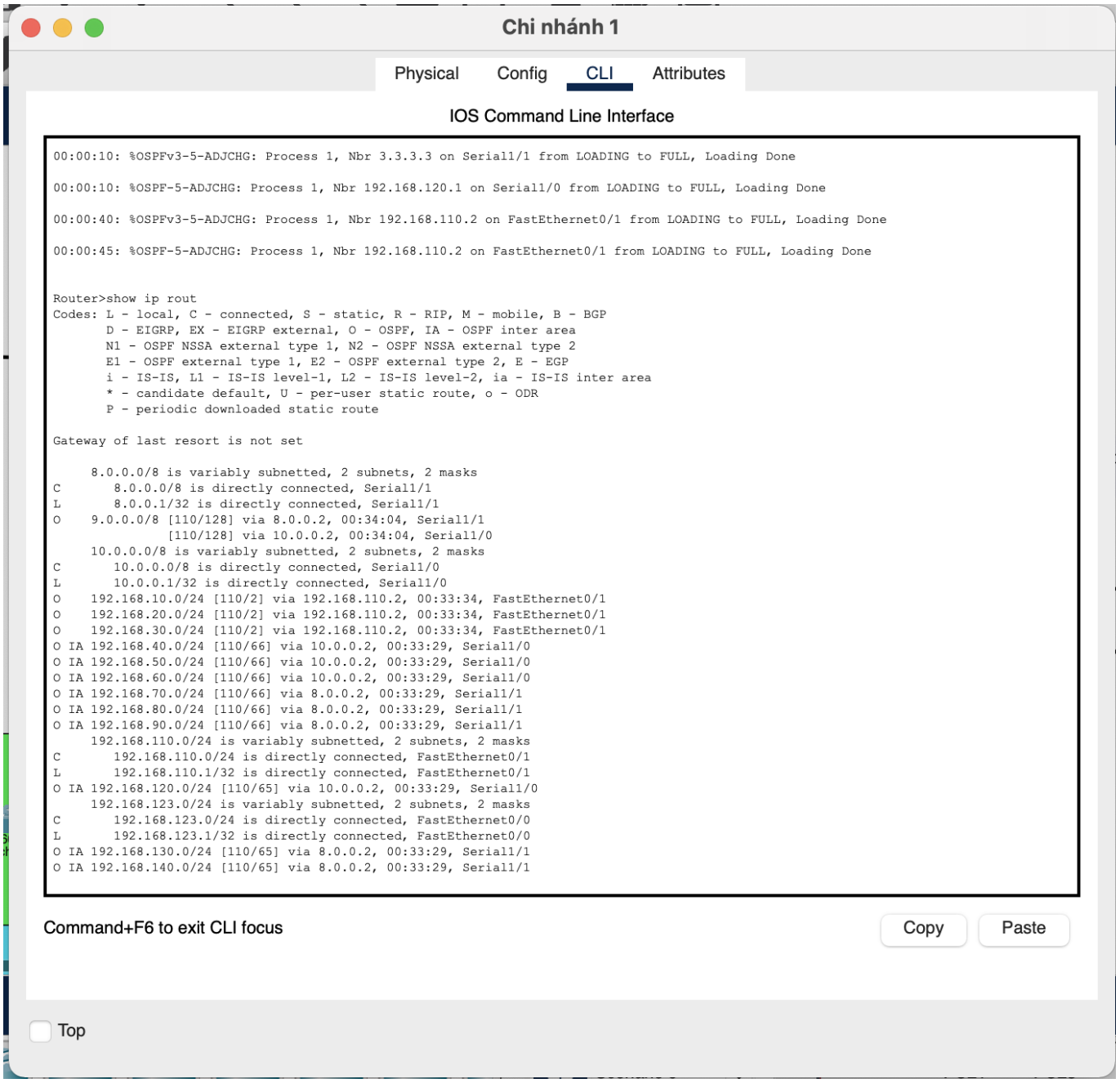

PC61
Physical
Config
Desktop
Programming
Attributes
MAIL BROWSER
X
Mails
Compose
Reply
Receive
Delete
Configure Mail
From
Subject
Received
1
52000848@tdtu.com
RE: RE: Hoi tham suc khoe
Th 2 thg 5 23 202215:16:04
2
52000848@tdtu.com
Hoi tham suc khoe
Th 2 thg 5 23 202215:14:55
Subject : RE: Hoi tham suc khoe
From : 52000844@tdtu.com
Sent : Mon May 23 2022 15:15:41
À Lộc đó à, tui cũng khoẻ lắm còn ông thì sao? Cũng lâu quá tụi mình không gặp!
Subject : Hoi tham suc khoe
From : 52000848@tdtu.com
Sent : Mon May 23 2022 15:14:55
Hello, Lộc nè, lâu quá không gặp, dạo này bạn khoẻ không?
Cancel
Top

4.3 Cấu hình định tuyến OSPF

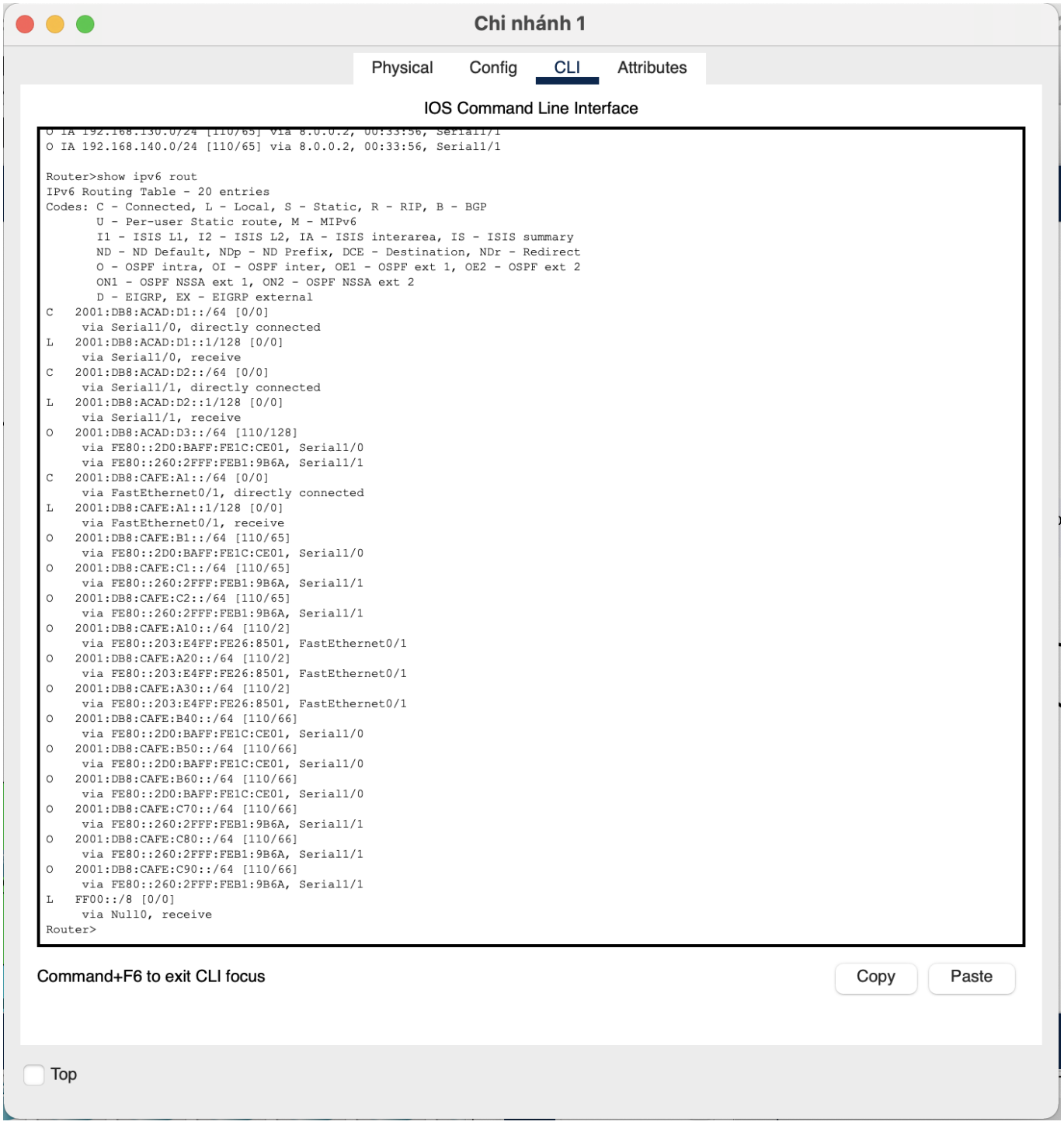
***Chi nhánh 1**

*Router

```
router ospf 1
network 10.0.0.0 0.255.255.255 area 0
network 8.0.0.0 0.255.255.255 area 0
network 192.168.123.0 0.0.0.255 area 1
network 192.168.110.0 0.0.0.255 area 1
```



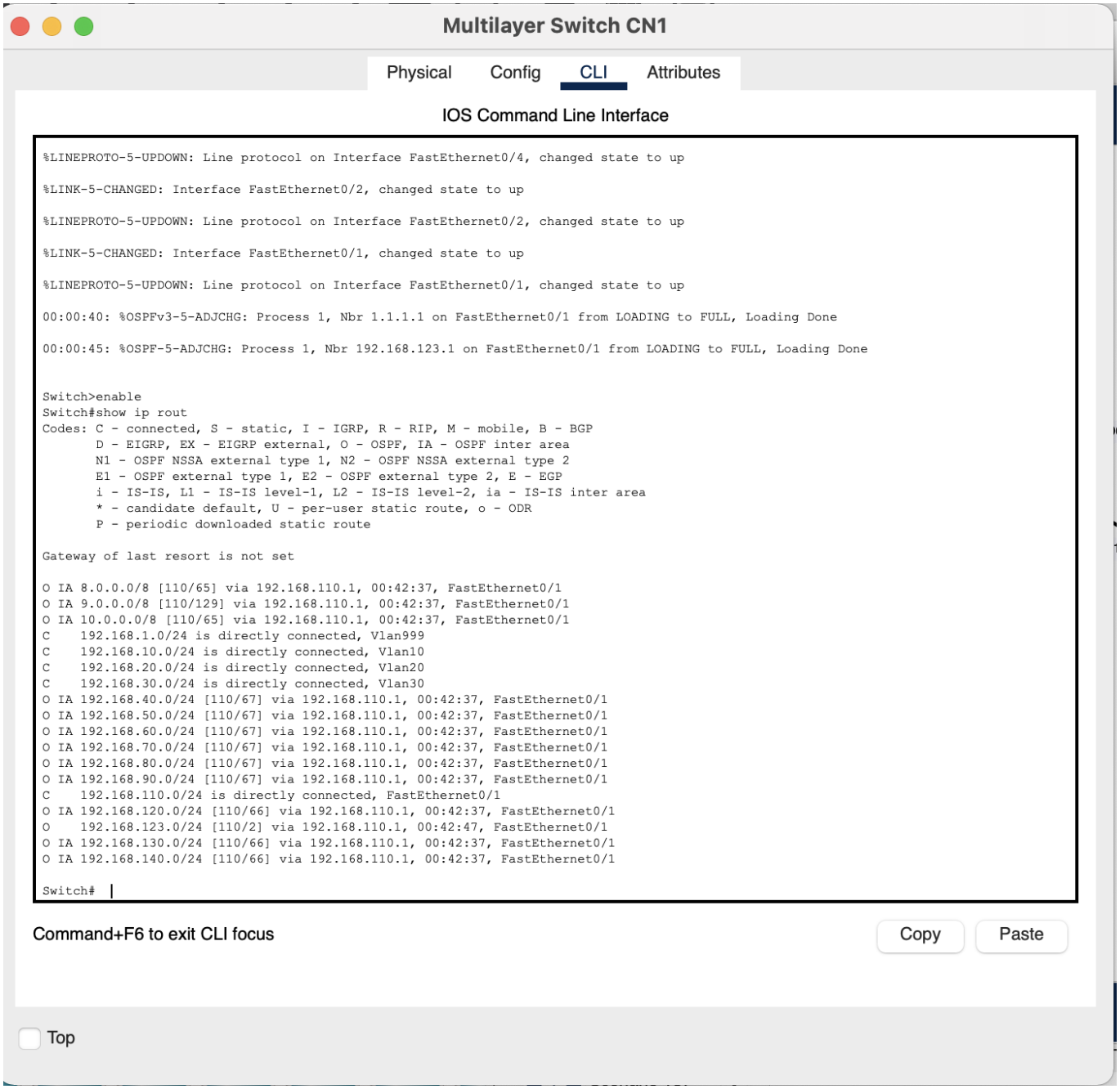
```
ipv6 router ospf 1
router-id 1.1.1.1
int se1/0
ipv6 ospf 1 area 0
int s1/1
ipv6 ospf 1 area 0
int f0/1
ipv6 ospf 1 area 0
```



*Multilayer Switch CN1

ipv6 router ospf 1
int f0/1
ipv6 ospf 1 area 0
int vlan 10
ipv6 ospf 1 area 0
int vlan 20

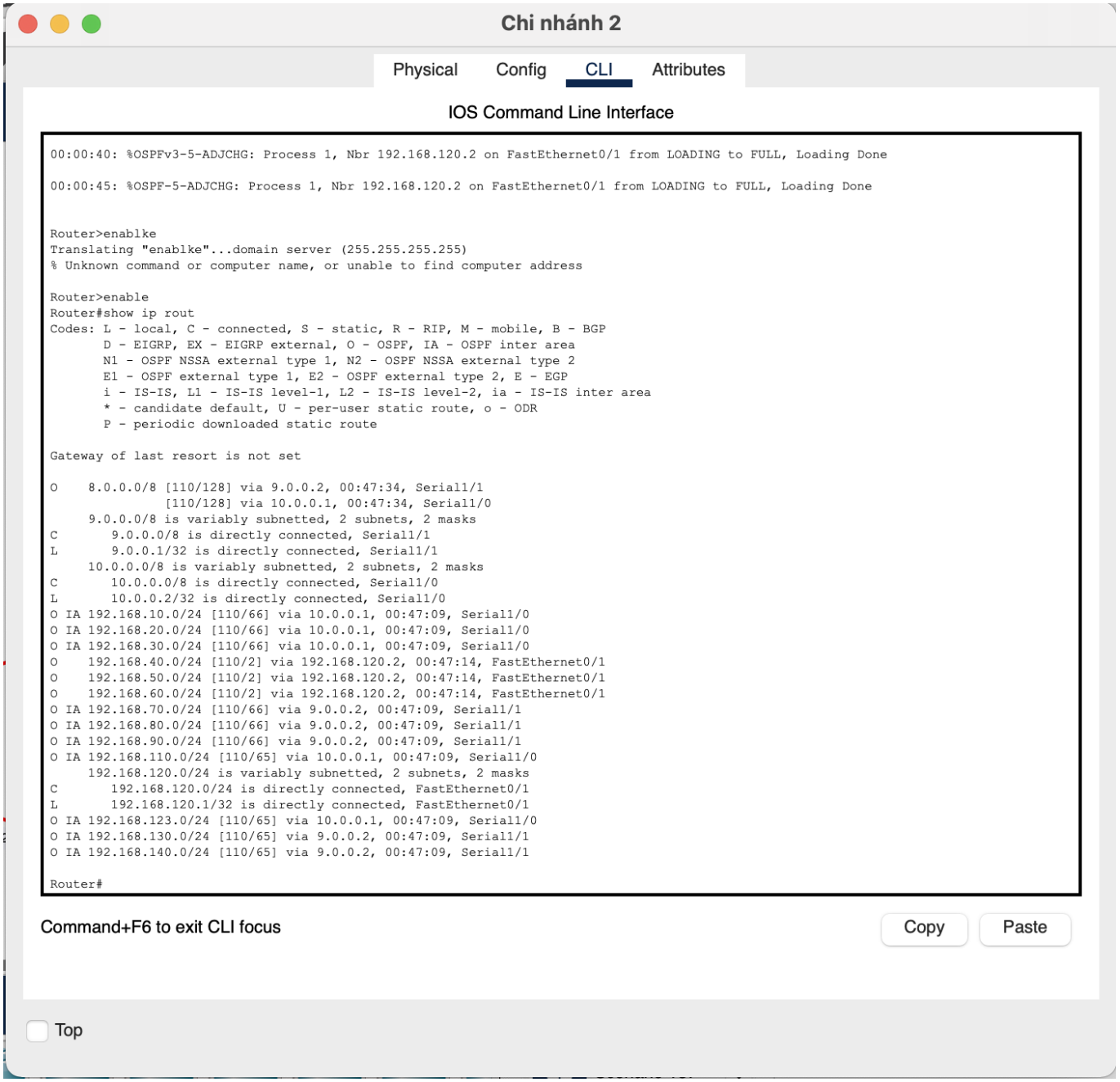
ipv6 ospf 1 area 0
int vlan 30
ipv6 ospf 1 area 0



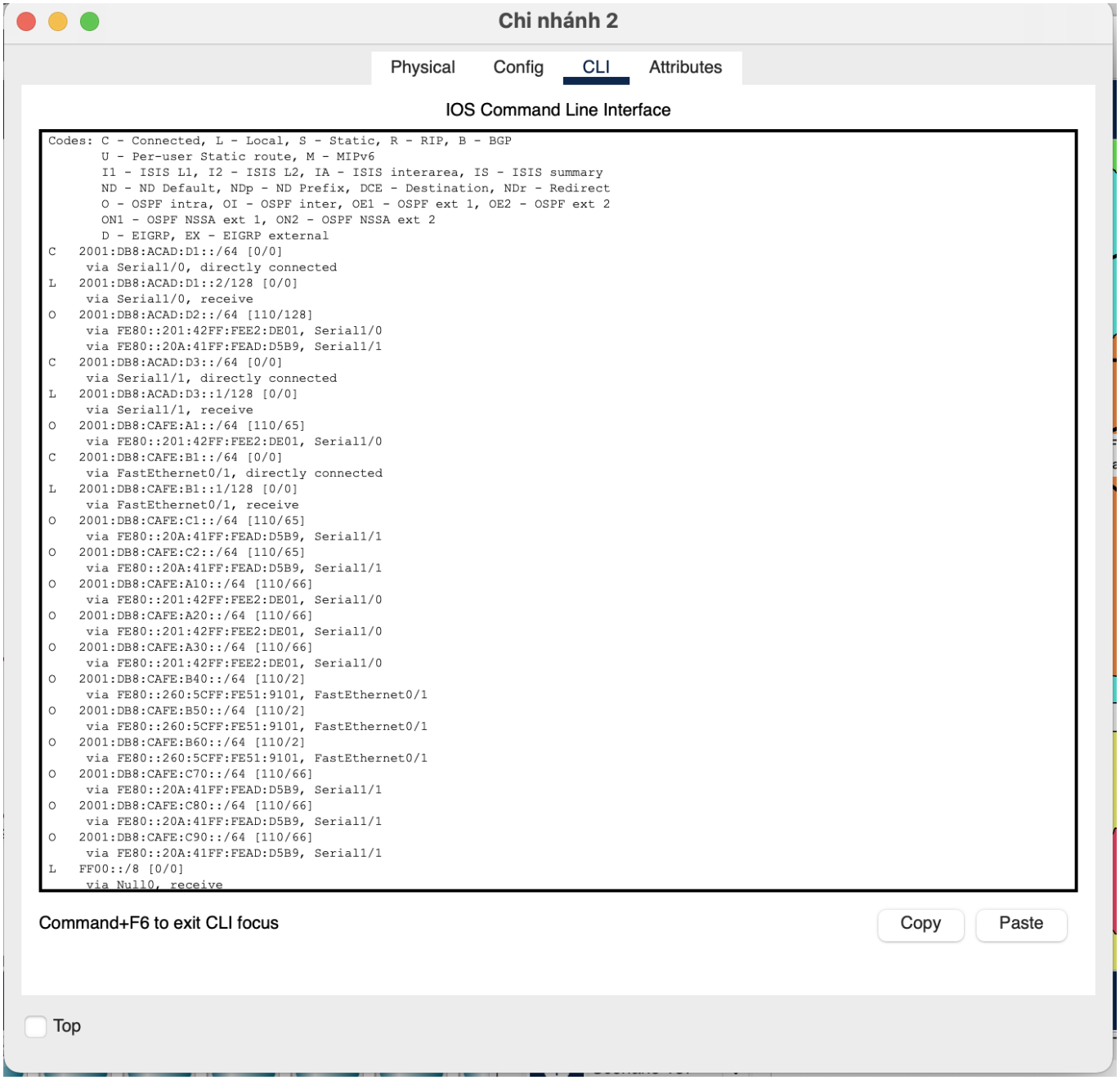
***Chi nhánh 2**

*Router

```
router ospf 1
network 192.168.120.0 0.0.0.255 area 2
 network 10.0.0.0 0.255.255.255 area 0
 network 9.0.0.0 0.255.255.255 area 0
```

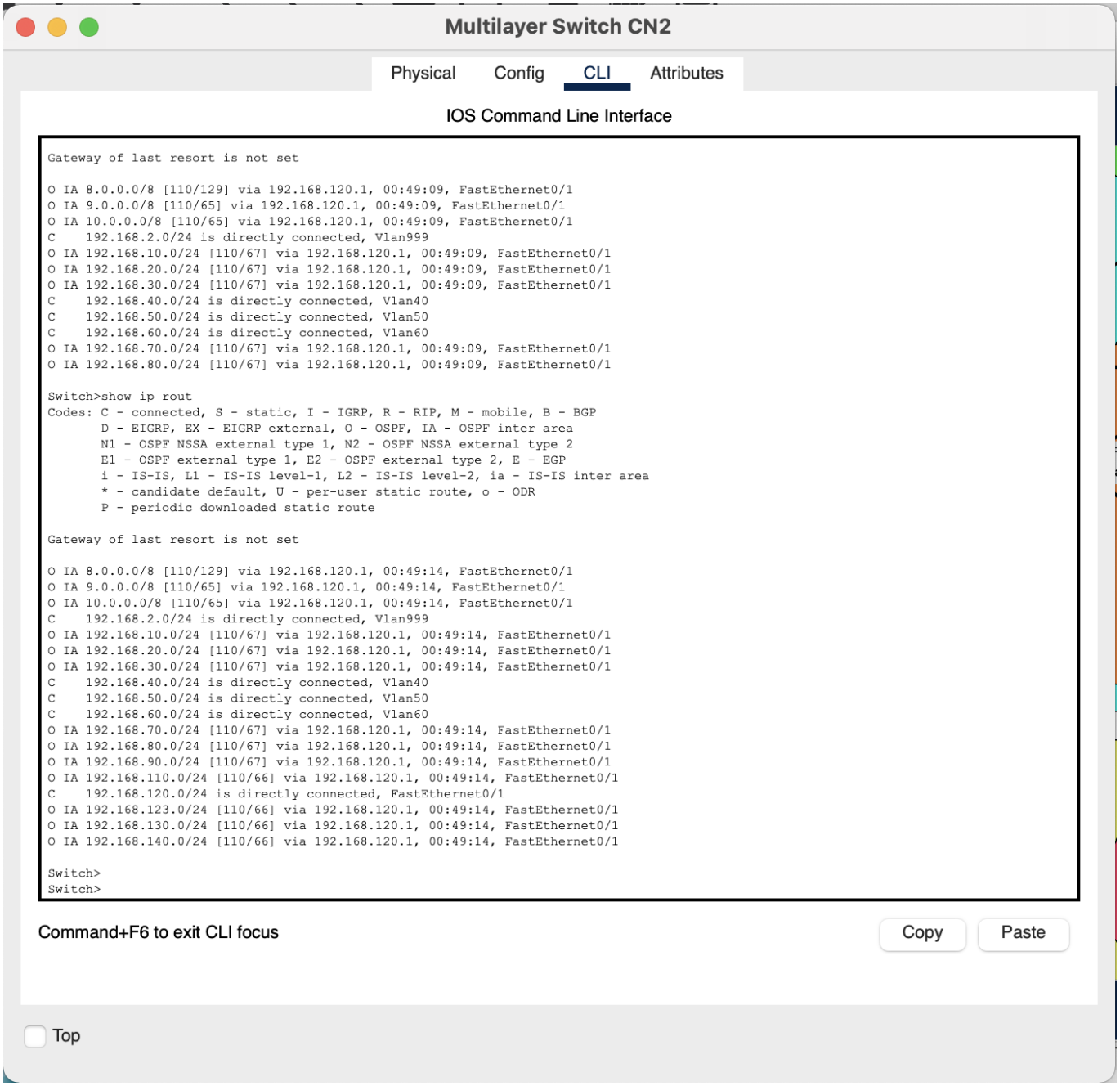


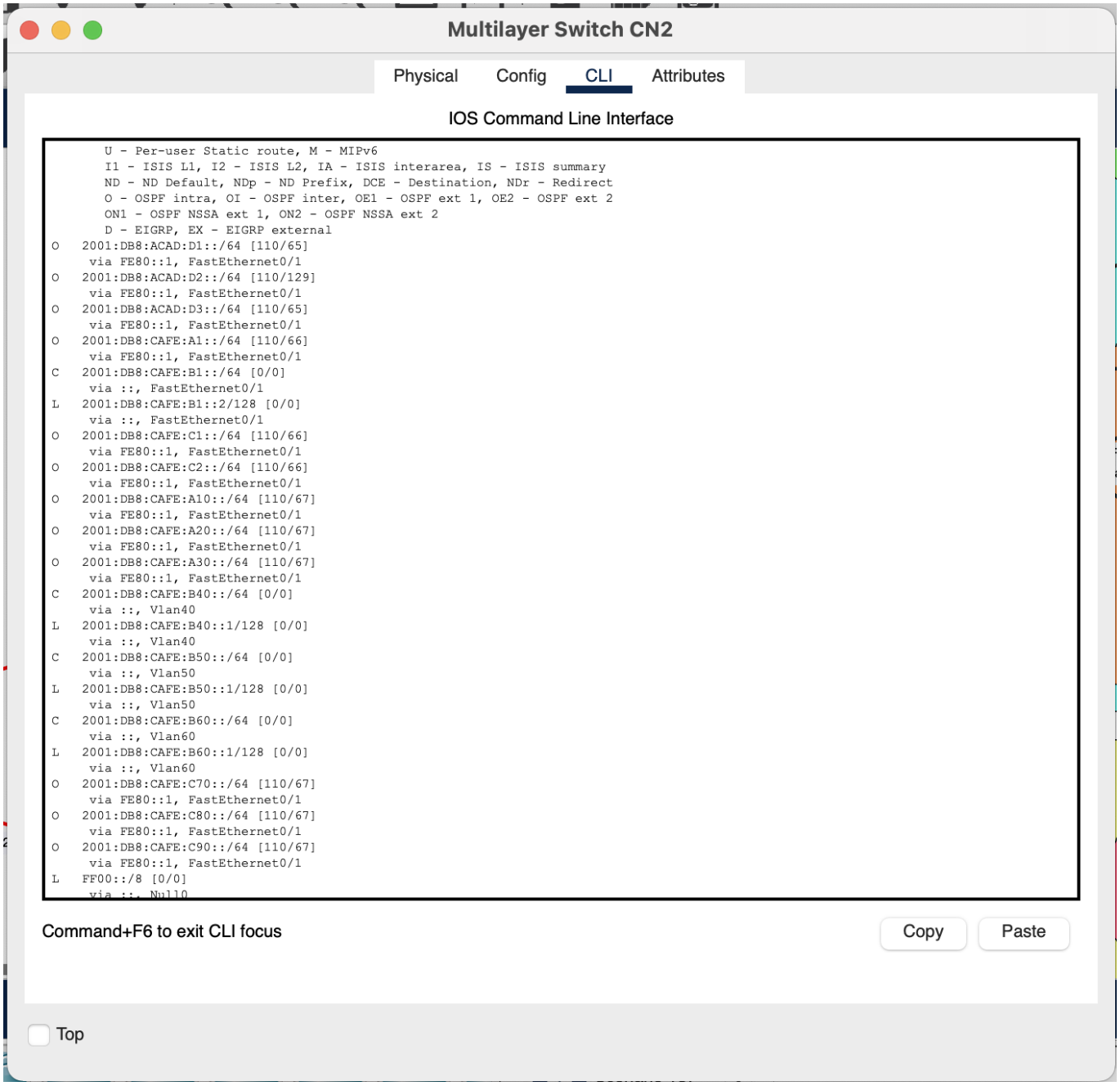
ipv6 router ospf 1
router-id 2.2.2.2
int se1/0
ipv6 ospf 1 area 0
int s1/1
ipv6 ospf 1 area 0
int fa0/1
ipv6 ospf 1 area 0



*Multilayer Switch CN2

ipv6 router ospf 1
int f0/1
ipv6 ospf 1 area 0
int vlan 40
ipv6 ospf 1 area 0
int vlan 50
ipv6 ospf 1 area 0
int vlan 60
ipv6 ospf 1 area 0

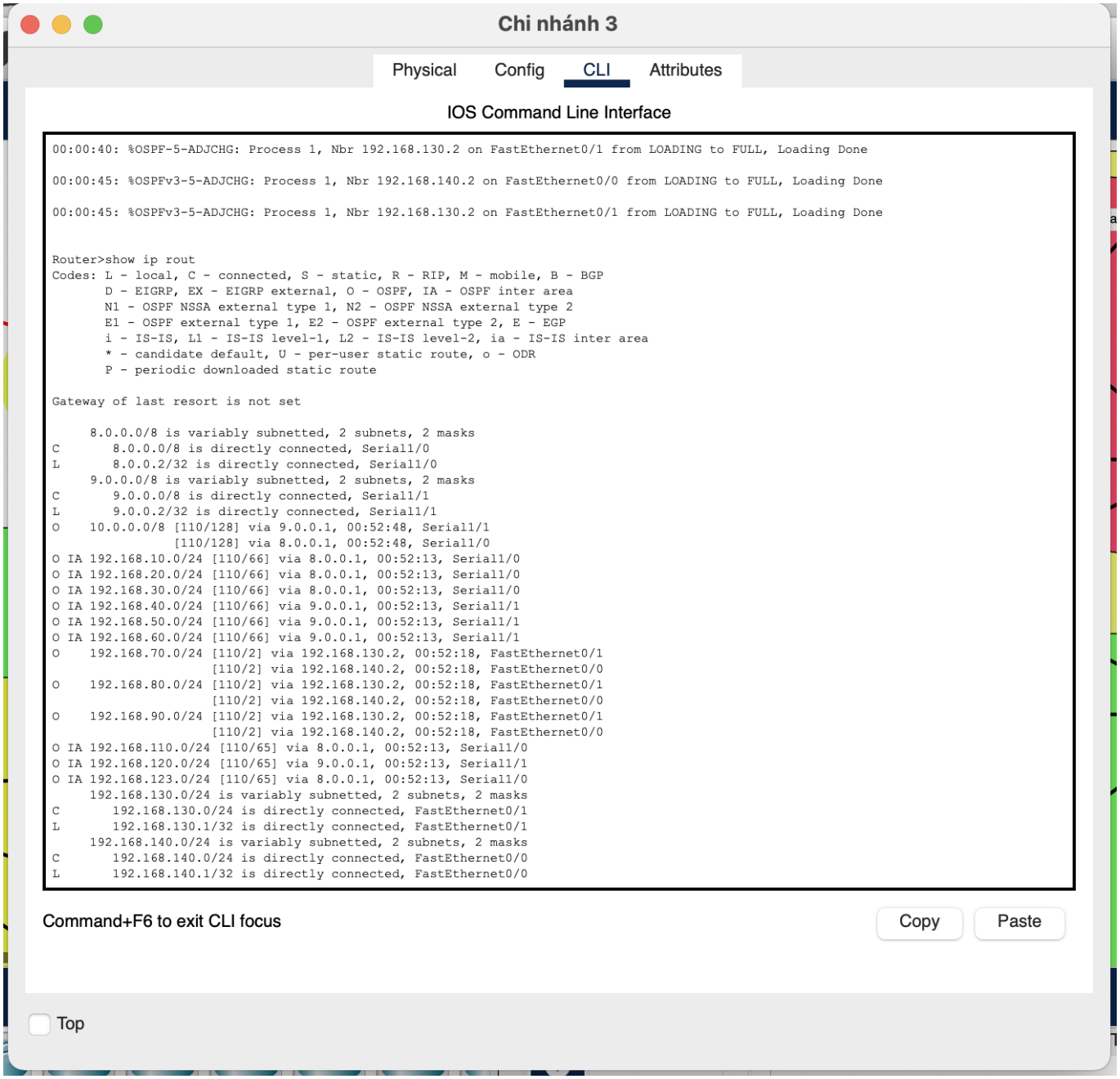

Multilayer Switch CN2
Physical
Config
CLI
Attributes
IOS Command Line Interface
Gateway of last resort is not set
O IA 8.0.0.0/8 [110/129] via 192.168.120.1, 00:49:09, FastEthernet0/1
O IA 9.0.0.0/8 [110/65] via 192.168.120.1, 00:49:09, FastEthernet0/1
O IA 10.0.0.0/8 [110/65] via 192.168.120.1, 00:49:09, FastEthernet0/1
C 192.168.2.0/24 is directly connected, Vlan999
O IA 192.168.10.0/24 [110/67] via 192.168.120.1, 00:49:09, FastEthernet0/1
O IA 192.168.20.0/24 [110/67] via 192.168.120.1, 00:49:09, FastEthernet0/1
O IA 192.168.30.0/24 [110/67] via 192.168.120.1, 00:49:09, FastEthernet0/1
C 192.168.40.0/24 is directly connected, Vlan40
C 192.168.50.0/24 is directly connected, Vlan50
C 192.168.60.0/24 is directly connected, Vlan60
O IA 192.168.70.0/24 [110/67] via 192.168.120.1, 00:49:09, FastEthernet0/1
O IA 192.168.80.0/24 [110/67] via 192.168.120.1, 00:49:09, FastEthernet0/1
Switch>show ip rout
Codes: C - connected, S - static, I - IGRP, R - RIP, M - mobile, B - BGP
D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS inter area
* - candidate default, U - per-user static route, o - ODR
P - periodic downloaded static route
Gateway of last resort is not set
O IA 8.0.0.0/8 [110/129] via 192.168.120.1, 00:49:14, FastEthernet0/1
O IA 9.0.0.0/8 [110/65] via 192.168.120.1, 00:49:14, FastEthernet0/1
O IA 10.0.0.0/8 [110/65] via 192.168.120.1, 00:49:14, FastEthernet0/1
C 192.168.2.0/24 is directly connected, Vlan999
O IA 192.168.10.0/24 [110/67] via 192.168.120.1, 00:49:14, FastEthernet0/1
O IA 192.168.20.0/24 [110/67] via 192.168.120.1, 00:49:14, FastEthernet0/1
O IA 192.168.30.0/24 [110/67] via 192.168.120.1, 00:49:14, FastEthernet0/1
C 192.168.40.0/24 is directly connected, Vlan40
C 192.168.50.0/24 is directly connected, Vlan50
C 192.168.60.0/24 is directly connected, Vlan60
O IA 192.168.70.0/24 [110/67] via 192.168.120.1, 00:49:14, FastEthernet0/1
O IA 192.168.80.0/24 [110/67] via 192.168.120.1, 00:49:14, FastEthernet0/1
O IA 192.168.90.0/24 [110/67] via 192.168.120.1, 00:49:14, FastEthernet0/1
O IA 192.168.110.0/24 [110/66] via 192.168.120.1, 00:49:14, FastEthernet0/1
C 192.168.120.0/24 is directly connected, FastEthernet0/1
O IA 192.168.123.0/24 [110/66] via 192.168.120.1, 00:49:14, FastEthernet0/1
O IA 192.168.130.0/24 [110/66] via 192.168.120.1, 00:49:14, FastEthernet0/1
O IA 192.168.140.0/24 [110/66] via 192.168.120.1, 00:49:14, FastEthernet0/1
Switch>
Switch>
Command+F6 to exit CLI focus
Copy
Paste
Top



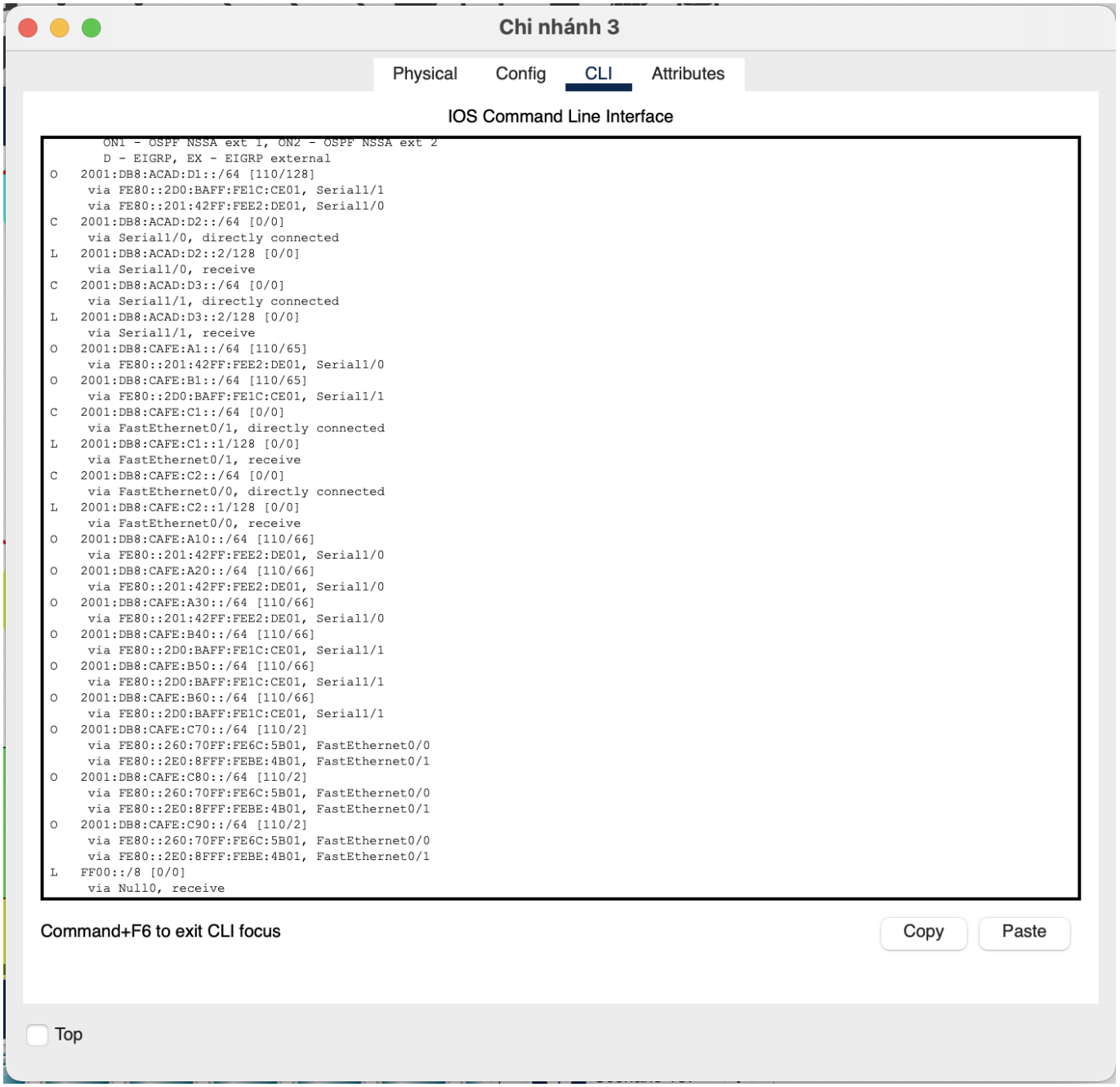
***Chi nhánh 3**

*Router

router ospf 1
network 9.0.0.0 0.255.255.255 area 0
network 8.0.0.0 0.255.255.255 area 0
network 192.168.130.0 0.0.0.255 area 3
network 192.168.140.0 0.0.0.255 area 3



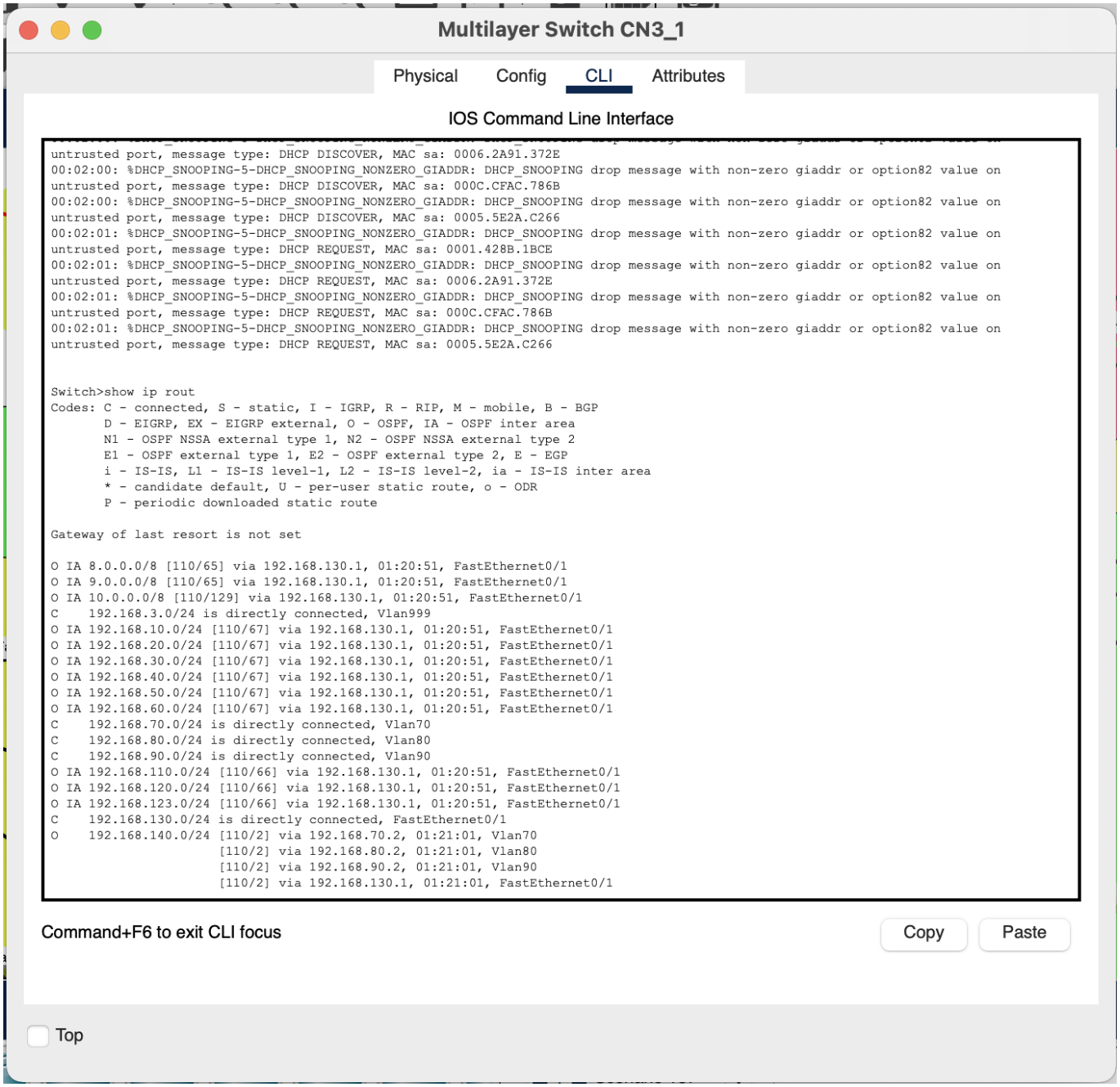
ipv6 router ospf 1
router-id 1.1.1.1
int se1/0
ipv6 ospf 1 area 0
int s1/1
ipv6 ospf 1 area 0
int f0/1
ipv6 ospf 1 area 0
int f0/0
ipv6 ospf 1 area 0

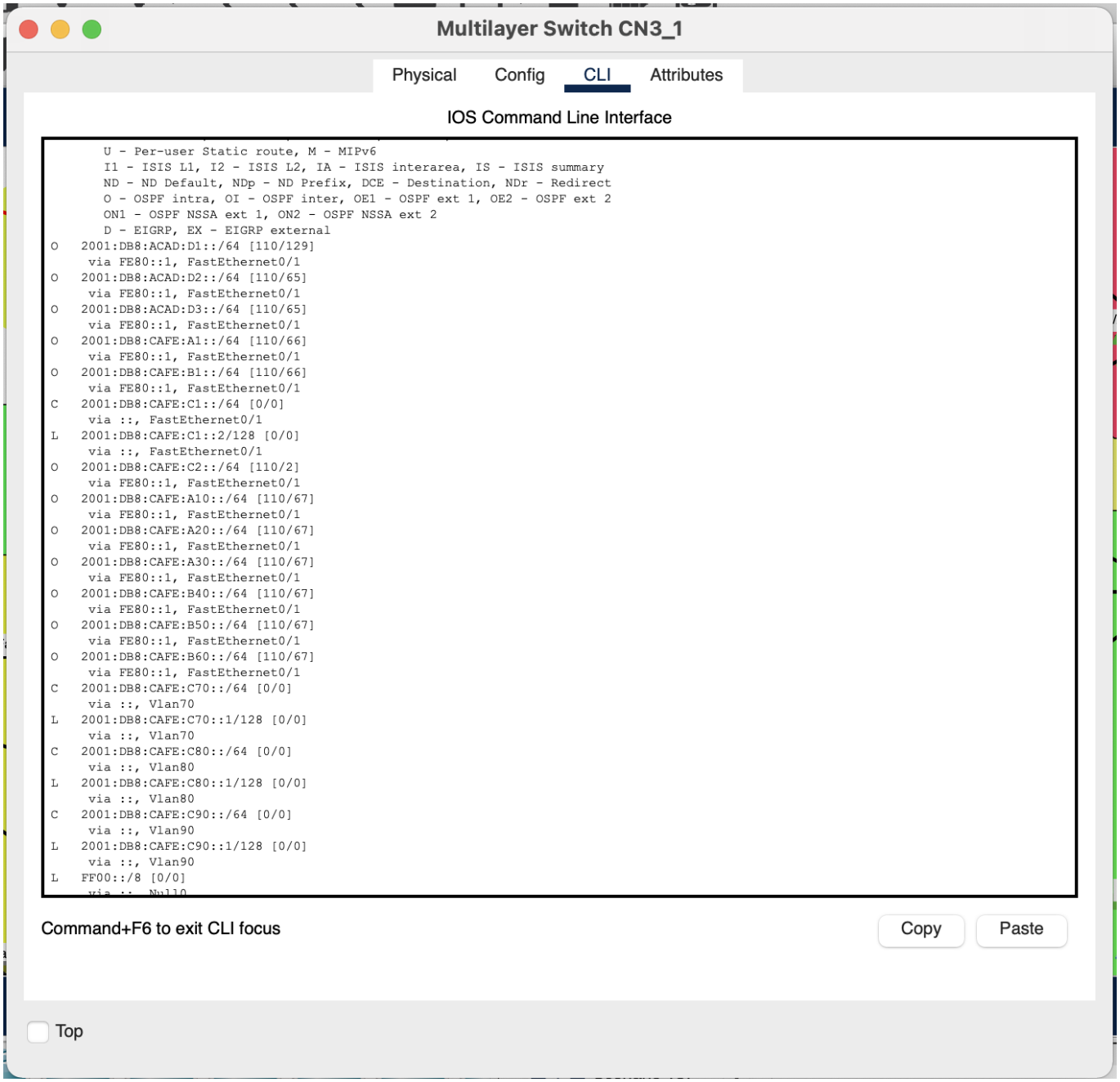


*Multilayer Switch CN3-1

ipv6 router ospf 1
int f0/1
ipv6 ospf 1 area 0
int vlan 70
ipv6 ospf 1 area 0
int vlan 80
ipv6 ospf 1 area 0
int vlan 90

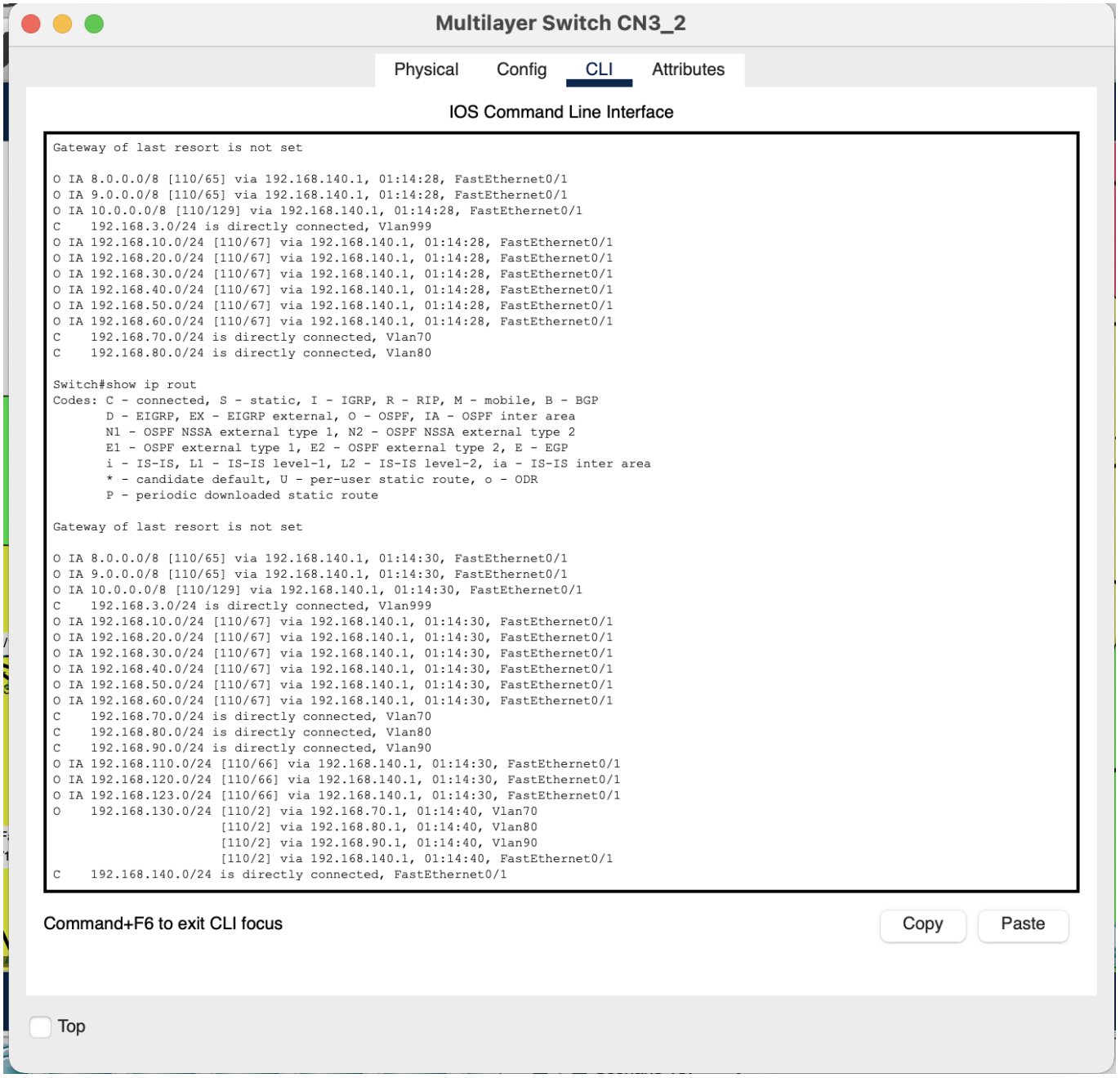
ipv6 ospf 1 area 0

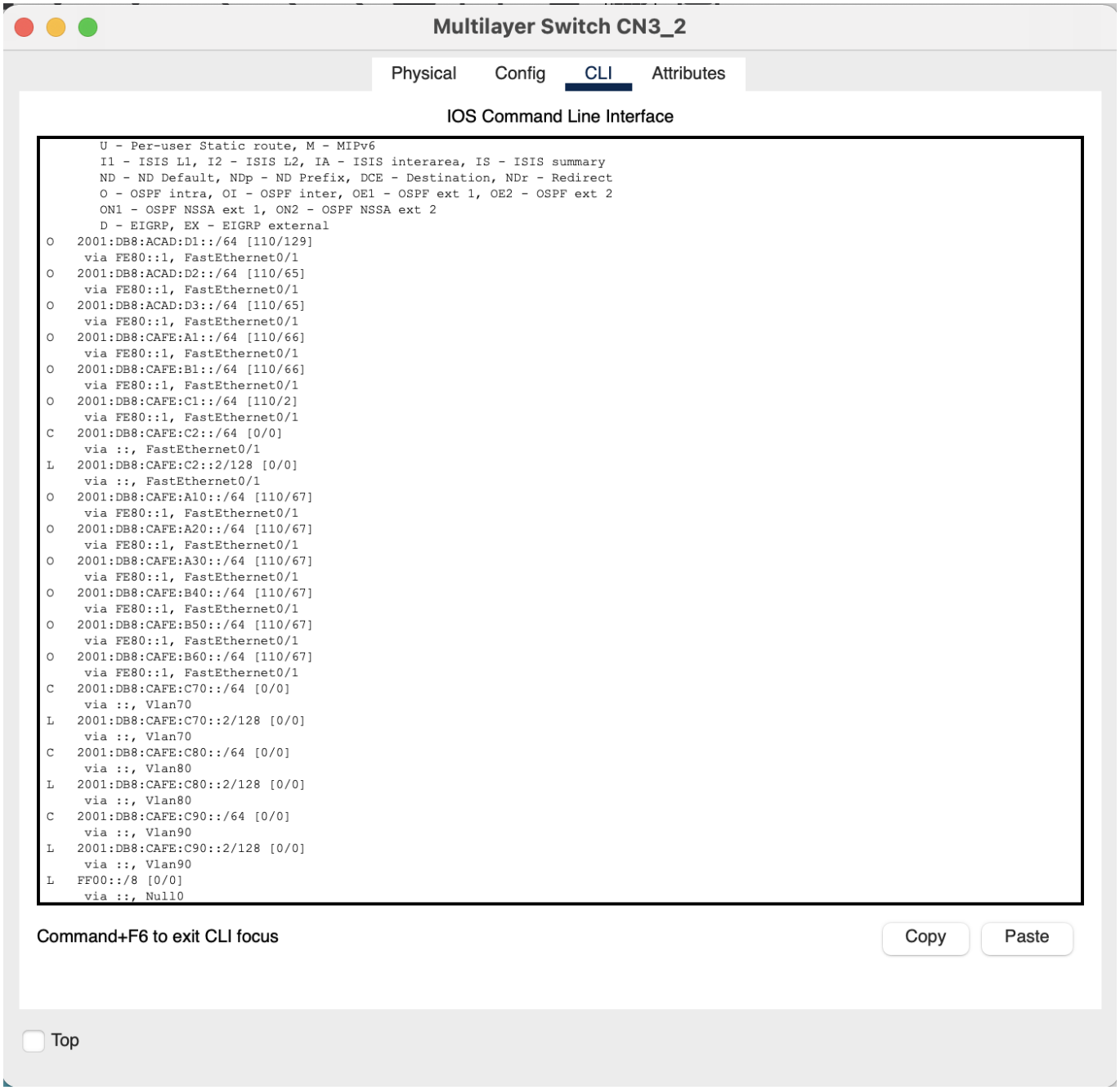




*Multilayer Switch CN3-2

```
ipv6 router ospf 1
int f0/1
ipv6 ospf 1 area 0
int vlan 70
ipv6 ospf 1 area 0
int vlan 80
ipv6 ospf 1 area 0
int vlan 90
ipv6 ospf 1 area 0
```


Multilayer Switch CN3_2
Physical
Config
CLI
Attributes
IOS Command Line Interface
Gateway of last resort is not set
O IA 8.0.0.0/8 [110/65] via 192.168.140.1, 01:14:28, FastEthernet0/1
O IA 9.0.0.0/8 [110/65] via 192.168.140.1, 01:14:28, FastEthernet0/1
O IA 10.0.0.0/8 [110/129] via 192.168.140.1, 01:14:28, FastEthernet0/1
C 192.168.3.0/24 is directly connected, Vlan999
O IA 192.168.10.0/24 [110/67] via 192.168.140.1, 01:14:28, FastEthernet0/1
O IA 192.168.20.0/24 [110/67] via 192.168.140.1, 01:14:28, FastEthernet0/1
O IA 192.168.30.0/24 [110/67] via 192.168.140.1, 01:14:28, FastEthernet0/1
O IA 192.168.40.0/24 [110/67] via 192.168.140.1, 01:14:28, FastEthernet0/1
O IA 192.168.50.0/24 [110/67] via 192.168.140.1, 01:14:28, FastEthernet0/1
O IA 192.168.60.0/24 [110/67] via 192.168.140.1, 01:14:28, FastEthernet0/1
C 192.168.70.0/24 is directly connected, Vlan70
C 192.168.80.0/24 is directly connected, Vlan80
Switch#show ip rout
Codes: C - connected, S - static, I - IGRP, R - RIP, M - mobile, B - BGP
D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area
N1 - OSPF NSSA external type 1, N2 - OSPF NSSA external type 2
E1 - OSPF external type 1, E2 - OSPF external type 2, E - EGP
i - IS-IS, L1 - IS-IS level-1, L2 - IS-IS level-2, ia - IS-IS inter area
* - candidate default, U - per-user static route, o - ODR
P - periodic downloaded static route
Gateway of last resort is not set
O IA 8.0.0.0/8 [110/65] via 192.168.140.1, 01:14:30, FastEthernet0/1
O IA 9.0.0.0/8 [110/65] via 192.168.140.1, 01:14:30, FastEthernet0/1
O IA 10.0.0.0/8 [110/129] via 192.168.140.1, 01:14:30, FastEthernet0/1
C 192.168.3.0/24 is directly connected, Vlan999
O IA 192.168.10.0/24 [110/67] via 192.168.140.1, 01:14:30, FastEthernet0/1
O IA 192.168.20.0/24 [110/67] via 192.168.140.1, 01:14:30, FastEthernet0/1
O IA 192.168.30.0/24 [110/67] via 192.168.140.1, 01:14:30, FastEthernet0/1
O IA 192.168.40.0/24 [110/67] via 192.168.140.1, 01:14:30, FastEthernet0/1
O IA 192.168.50.0/24 [110/67] via 192.168.140.1, 01:14:30, FastEthernet0/1
O IA 192.168.60.0/24 [110/67] via 192.168.140.1, 01:14:30, FastEthernet0/1
C 192.168.70.0/24 is directly connected, Vlan70
C 192.168.80.0/24 is directly connected, Vlan80
C 192.168.90.0/24 is directly connected, Vlan90
O IA 192.168.110.0/24 [110/66] via 192.168.140.1, 01:14:30, FastEthernet0/1
O IA 192.168.120.0/24 [110/66] via 192.168.140.1, 01:14:30, FastEthernet0/1
O IA 192.168.123.0/24 [110/66] via 192.168.140.1, 01:14:30, FastEthernet0/1
O 192.168.130.0/24 [110/2] via 192.168.70.1, 01:14:40, Vlan70
[110/2] via 192.168.80.1, 01:14:40, Vlan80
[110/2] via 192.168.90.1, 01:14:40, Vlan90
[110/2] via 192.168.140.1, 01:14:40, FastEthernet0/1
C 192.168.140.0/24 is directly connected, FastEthernet0/1
Command+F6 to exit CLI focus
Copy
Paste
Top


Multilayer Switch CN3_2
Physical
Config
CLI
Attributes
IOS Command Line Interface
U - Per-user Static route, M - MIPv6
I1 - ISIS L1, I2 - ISIS L2, IA - ISIS interarea, IS - ISIS summary
ND - ND Default, NDp - ND Prefix, DCE - Destination, NDr - Redirect
O - OSPF intra, OI - OSPF inter, OE1 - OSPF ext 1, OE2 - OSPF ext 2
ON1 - OSPF NSSA ext 1, ON2 - OSPF NSSA ext 2
D - EIGRP, EX - EIGRP external
O 2001:DB8:ACAD:D1::/64 [110/129]
via FE80::1, FastEthernet0/1
O 2001:DB8:ACAD:D2::/64 [110/65]
via FE80::1, FastEthernet0/1
O 2001:DB8:ACAD:D3::/64 [110/65]
via FE80::1, FastEthernet0/1
O 2001:DB8:CAFE:A1::/64 [110/66]
via FE80::1, FastEthernet0/1
O 2001:DB8:CAFE:B1::/64 [110/66]
via FE80::1, FastEthernet0/1
O 2001:DB8:CAFE:C1::/64 [110/2]
via FE80::1, FastEthernet0/1
C 2001:DB8:CAFE:C2::/64 [0/0]
via ::, FastEthernet0/1
L 2001:DB8:CAFE:C2::2/128 [0/0]
via ::, FastEthernet0/1
O 2001:DB8:CAFE:A10::/64 [110/67]
via FE80::1, FastEthernet0/1
O 2001:DB8:CAFE:A20::/64 [110/67]
via FE80::1, FastEthernet0/1
O 2001:DB8:CAFE:A30::/64 [110/67]
via FE80::1, FastEthernet0/1
O 2001:DB8:CAFE:B40::/64 [110/67]
via FE80::1, FastEthernet0/1
O 2001:DB8:CAFE:B50::/64 [110/67]
via FE80::1, FastEthernet0/1
O 2001:DB8:CAFE:B60::/64 [110/67]
via FE80::1, FastEthernet0/1
C 2001:DB8:CAFE:C70::/64 [0/0]
via ::, Vlan70
L 2001:DB8:CAFE:C70::2/128 [0/0]
via ::, Vlan70
C 2001:DB8:CAFE:C80::/64 [0/0]
via ::, Vlan80
L 2001:DB8:CAFE:C80::2/128 [0/0]
via ::, Vlan80
C 2001:DB8:CAFE:C90::/64 [0/0]
via ::, Vlan90
L 2001:DB8:CAFE:C90::2/128 [0/0]
via ::, Vlan90
L FF00::/8 [0/0]
via ::, Null0
Command+F6 to exit CLI focus
Copy
Paste
Top

4.4 Cấu hình STP và HSRP

CHI NHÁNH 3

Multilayer Switch CN3-2

```
spanning-tree mode pvst
interface vlan 70
standby 1 ip 192.168.70.3
standby 1 preempt
standby version 2
standby 2 ipv6 autoconfig
standby 2 priority 101
standby 2 preempt
interface vlan 80
standby 1 ip 192.168.80.3
standby 1 preempt
standby version 2
standby 2 ipv6 autoconfig
standby 2 priority 101
standby 2 preempt
interface vlan 90
standby 1 ip 192.168.90.3
standby 1 preempt
standby version 2
standby 2 ipv6 autoconfig
standby 2 priority 101
standby 2 preempt
```

Multilayer Switch CN3-1

```
spanning-tree mode pvst
interface vlan 70
standby 1 ip 192.168.70.3
standby 1 priority 150
standby 1 preempt
standby version 2
standby 2 ipv6 autoconfig
standby 2 priority 151
standby 2 preempt
interface vlan 80
standby 1 ip 192.168.80.3
standby 1 priority 150
standby 1 preempt
standby version 2
standby 2 ipv6 autoconfig
standby 2 priority 151
standby 2 preempt
interface vlan 90
```

```
standby 1 ip 192.168.90.3
standby 1 priority 150
standby 1 preempt
standby version 2
standby 2 ipv6 autoconfig
standby 2 priority 151
standby 2 preempt
```

4.5 Cấu hình bảo mật cơ bản(DHCP Snooping)

CHI NHÁNH 1

Switch DHCP1

```
ip dhcp snooping
interface f0/1
switchport mode access
switchport access vlan 999
ip dhcp snooping trust
```

Multilayer Switch CN1

```
ip dhcp snooping
interface f0/2
ip dhcp snooping trust
```

CHI NHÁNH 2

Switch DHCP2

```
ip dhcp snooping
interface f0/2
switchport mode access
switchport access vlan 999
ip dhcp snooping trust
```

Multilayer Switch CN2

```
ip dhcp snooping
interface f0/2
ip dhcp snooping trust
```

CHI NHÁNH 3

Switch DHCP3

```
ip dhcp snooping
interface f0/2
switchport mode access
switchport access vlan 999
ip dhcp snooping trust
```

Multilayer Switch CN3-1

```
ip dhcp snooping
interface f0/2
ip dhcp snooping trust
```

Multilayer Switch CN3-2

```
ip dhcp snooping
interface f0/4
ip dhcp snooping trust
```

Tài liệu tham khảo

-Video bài giảng của thầy Trương Đình Tú.
-Bài tập thực hành trên lớp của thầy Mai Duy Tân.