



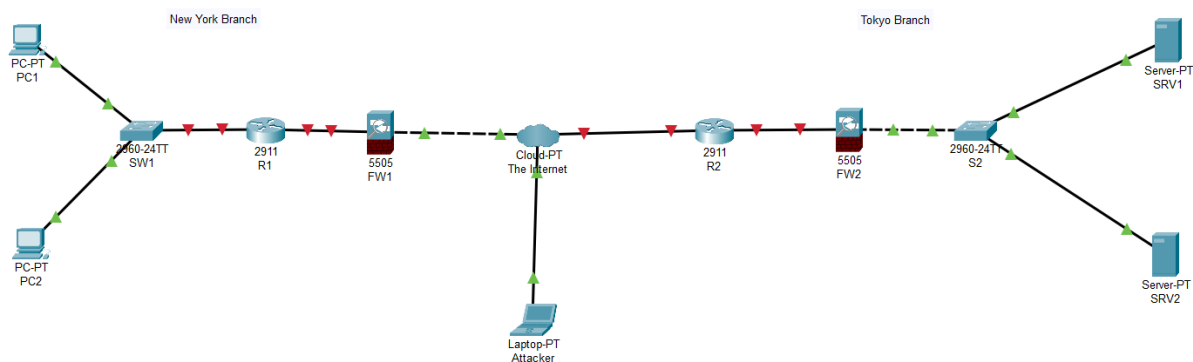
LAB 1

Giới Thiệu Packet Tracer - Cấu Hình Switch và Thiết Bị Đầu Cuối - Phân Tích Ethernet Switching

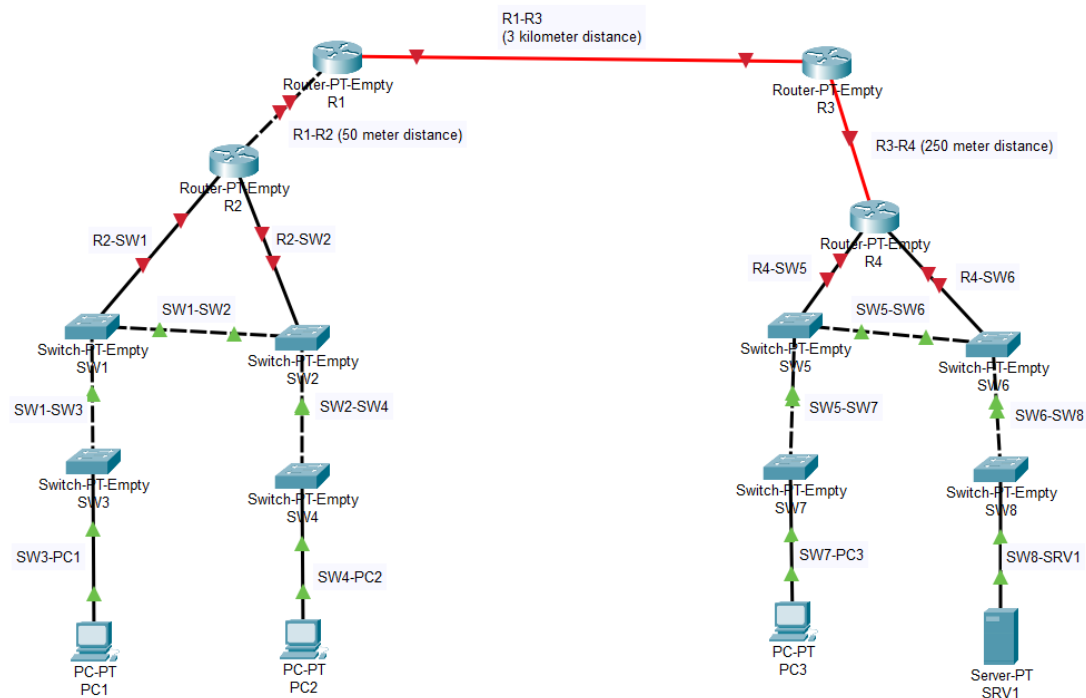
Họ tên và MSSV: Nguyễn Hữu Tường - B1910480

Nhóm học phần: CT29306

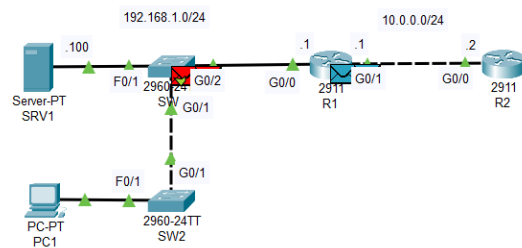
1. Giới thiệu Packet Tracer



2. Nối kết các thiết bị



3. Mô hình OSI



Event List				
Vis.	Time(sec)	Last Device	At Device	Type
	0.946	--	SW2	STP
	0.947	SW2	PC1	STP
	0.947	SW2	SW1	STP
	0.948	SW1	R1	STP
	0.948	SW1	SRV1	STP
	2.806	--	R2	CDP
	2.807	R2	R1	CDP
	2.807	--	SW2	OTF
	2.808	--	R1	CDP
	2.808	--	R1	CDP
	2.808	SW2	SW1	DTP
	2.808	--	SW1	DTP

Reset Simulation ☒ Constant Delay Captured to: 2.808 s

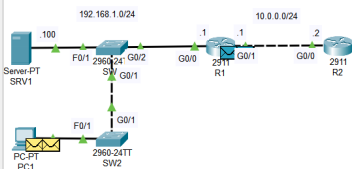
Play Controls

PC1

Physical Config Desktop Programming Attributes

Command Prompt

Classo Packet Tracer PC Command Line 1.0
C:\>ipconfig /release
Invalid Command.
C:\>ipconfig /release
IP Address.....: 0.0.0.0
Subnet Mask.....: 0.0.0.0
Default Gateway.....: 0.0.0.0
DNS Servers.....: 0.0.0.0
C:\>ipconfig /renew



Vis.	Time(sec)	Last Device	At Device	Type
0.950	--	SW2		STP
0.951	SW2	PC1		STP
0.951	SW2	SW1		STP
0.952	SW1	SRV1		STP
0.952	SW1	R1		STP
2.951	--	SW2		STP
2.952	SW2	PC1		STP
2.952	SW2	SW1		STP
2.953	SW1	SRV1		STP
2.953	SW1	R1		STP
4.066	--	R1		CDP
4.066	--	R1		CDP
4.066	--	PC1		DHCP
4.066	--	PC1		DHCP

PDU Information at Device: PC1

OSI Model Outbound PDU Details

At Device: PC1
Source: PC1
Destination: 255.255.255.255

In Layers

Layer7
Layer6
Layer5
Layer4
Layer3
Layer2
Layer1

Out Layers

Layer 7: DHCP Packet Server: 0.0.0.0, Client: 0.0.0.0
Layer6
Layer5
Layer 4: UDP Src Port: 68, Dst Port: 67
Layer 3: IP Header Src. IP: 0.0.0.0, Dest. IP: 255.255.255.255
Layer 2: Ethernet II Header 0030.F276.99EB >> FFFF.FFFF.FFFF
Layer 1: Port(s):

1. The next-hop IP address is a broadcast. The ARP process sets the frame's destination MAC address to the broadcast MAC address.
2. The device encapsulates the PDU into an Ethernet frame.

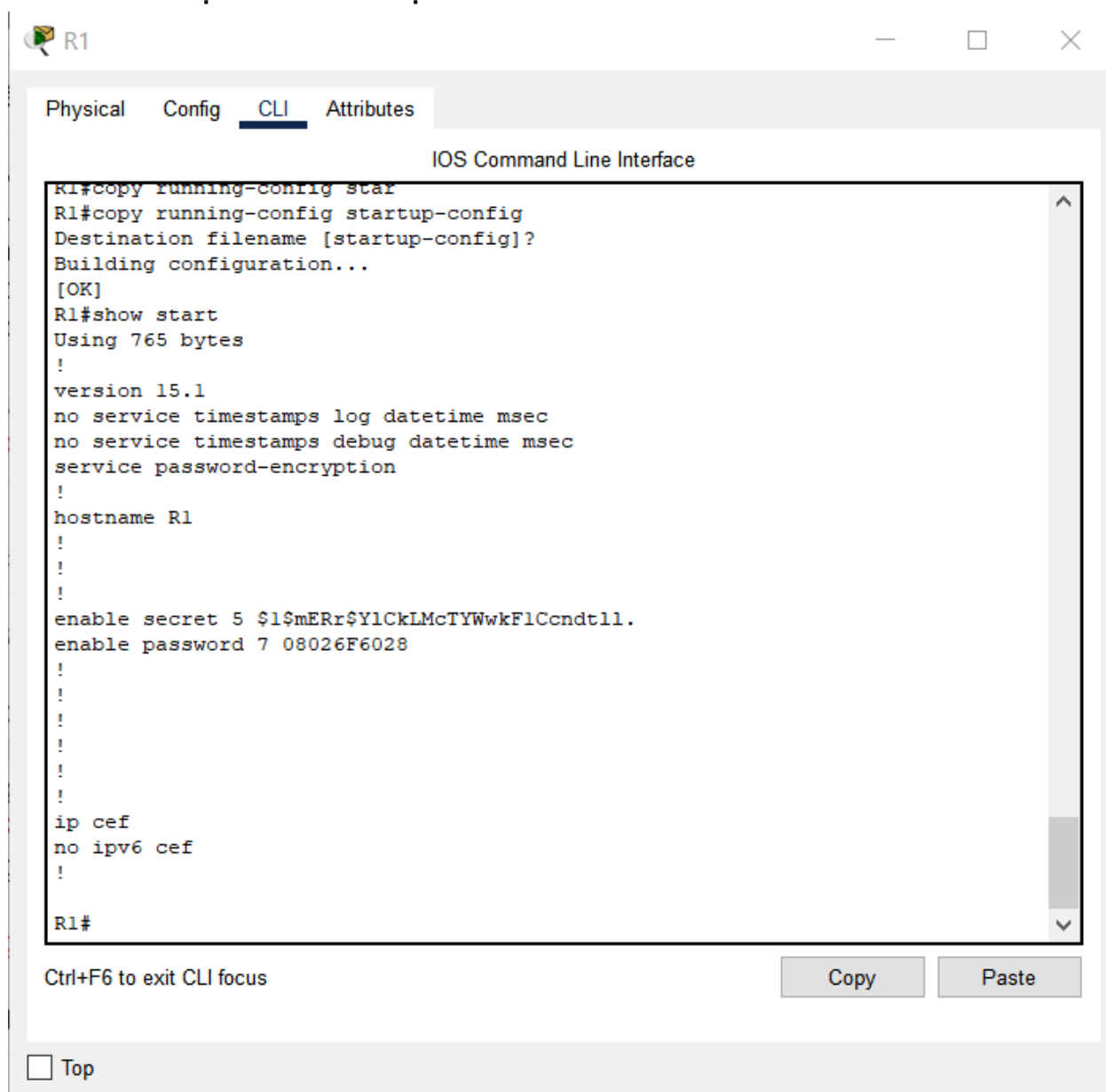
Challenge Me

<< Previous Layer

Next Layer >>

- Layer 2: ARP
- Layer 3: IP
- Layer 4: UDP
- Layer 7: DHCP

4. Cấu hình bảo mật cho các thiết bị:



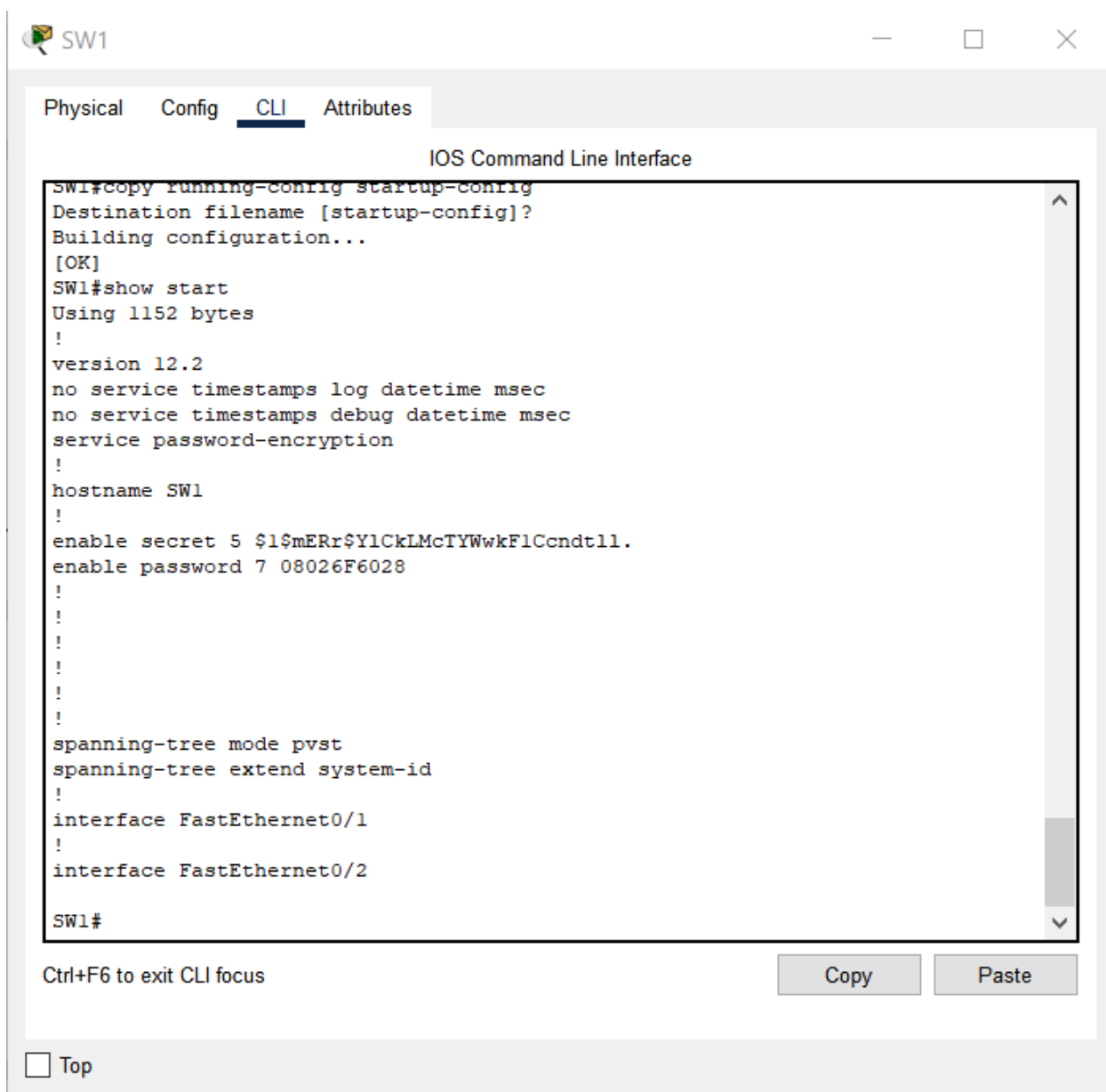
The screenshot shows a network configuration window titled "R1" with tabs for "Physical", "Config", "CLI", and "Attributes". The "CLI" tab is active, displaying the "IOS Command Line Interface". The interface shows a series of commands entered to configure security on a device named R1. The commands include copying the running configuration to the startup configuration, showing the startup configuration, and enabling various security features like service timestamps, password encryption, and secret encryption. The output of the "show start" command is displayed, showing the current configuration. The window also includes a "Ctrl+F6 to exit CLI focus" message and "Copy" and "Paste" buttons.

```
R1#copy running-config star
R1#copy running-config startup-config
Destination filename [startup-config]?
Building configuration...
[OK]
R1#show start
Using 765 bytes
!
version 15.1
no service timestamps log datetime msec
no service timestamps debug datetime msec
service password-encryption
!
hostname R1
!
!
!
enable secret 5 $l$mERr$YlCkLMcTYWwkFlCndt1l.
enable password 7 08026F6028
!
!
!
!
!
ip cef
no ipv6 cef
!
R1#
```

Ctrl+F6 to exit CLI focus

Copy Paste

☐ Top



The screenshot shows a network switch window titled 'SW1' with tabs for Physical, Config, CLI, and Attributes. The CLI tab is active, displaying the 'IOS Command Line Interface'. The command history shows the following sequence of commands and their outputs:



```
SW1#copy running-config startup-config
Destination filename [startup-config]?
Building configuration...
[OK]
SW1#show start
Using 1152 bytes
!
version 12.2
no service timestamps log datetime msec
no service timestamps debug datetime msec
service password-encryption
!
hostname SW1
!
enable secret 5 $1$mERr$YlCkLMcTYWwkFlCndt1l.
enable password 7 08026F6028
!
!
!
!
!
!
spanning-tree mode pvst
spanning-tree extend system-id
!
interface FastEthernet0/1
!
interface FastEthernet0/2
SW1#
```

At the bottom of the CLI window, there is a prompt 'Ctrl+F6 to exit CLI focus' and two buttons: 'Copy' and 'Paste'. Below the CLI window, there is a 'Top' button.



5. Phân tích Ethernet switching

- Những thông điệp nhận được khi ping từ PC1 đến PC3:


Thông điệp 1: ARP Request - thiết bị nhận : PC2, PC3, PC4

Simulation Panel				
Event List				
Vis.	Time(sec)	Last Device	At Device	Type
	0.000	--	PC1	ICMP
	0.000	--	PC1	ARP
	0.001	PC1	SW1	ARP
	0.002	SW1	PC2	ARP
	0.002	SW1	SW2	ARP
	0.003	SW2	PC3	ARP
	0.003	SW2	PC4	ARP

Thông điệp 2: ARP Reply - Thiết bị nhận: PC1

Simulation Panel				
Event List				
Vis.	Time(sec)	Last Device	At Device	Type
	0.000	--	PC1	ICMP
	0.000	--	PC1	ARP
	0.001	PC1	SW1	ARP
	0.002	SW1	PC2	ARP
	0.002	SW1	SW2	ARP
	0.003	SW2	PC3	ARP
	0.003	SW2	PC4	ARP
	0.004	PC3	SW2	ARP
	0.005	SW2	SW1	ARP
	0.006	SW1	PC1	ARP
	0.006	--	PC1	ICMP


Thông điệp 3: ICMP Echo Request - Thiết bị nhận: PC3

Simulation Panel				
Event List				
Vis.	Time(sec)	Last Device	At Device	Type
	0.000	--	PC1	ICMP
	0.000	--	PC1	ARP
	0.001	PC1	SW1	ARP
	0.002	SW1	PC2	ARP
	0.002	SW1	SW2	ARP
	0.003	SW2	PC3	ARP
	0.003	SW2	PC4	ARP
	0.004	PC3	SW2	ARP
	0.005	SW2	SW1	ARP
	0.006	SW1	PC1	ARP
	0.006	--	PC1	ICMP
	0.007	PC1	SW1	ICMP
	0.008	SW1	SW2	ICMP
	0.009	SW2	PC3	ICMP

Thông điệp 4: ICMP Echo Reply - Thiết bị nhận PC1:

Simulation Panel				
Event List				
Vis.	Time(sec)	Last Device	At Device	Type
	0.000	--	PC1	ARP
	0.001	PC1	SW1	ARP
	0.002	SW1	PC2	ARP
	0.002	SW1	SW2	ARP
	0.003	SW2	PC3	ARP
	0.003	SW2	PC4	ARP
	0.004	PC3	SW2	ARP
	0.005	SW2	SW1	ARP
	0.006	SW1	PC1	ARP
	0.006	--	PC1	ICMP
	0.007	PC1	SW1	ICMP
	0.008	SW1	SW2	ICMP
	0.009	SW2	PC3	ICMP
	0.010	PC3	SW2	ICMP
	0.011	SW2	SW1	ICMP
	0.012	SW1	PC1	ICMP

Địa chỉ MAC của các PC

 SW1

Physical

Config

CLI

Attributes

IOS Command Line Interface

```
%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1, changed
state to up

%LINK-5-CHANGED: Interface FastEthernet0/2, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/2, changed
state to up

%LINK-5-CHANGED: Interface GigabitEthernet0/1, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/1, changed
state to up


SW1>en
SW1>enable
SW1#show mac
SW1#show mac add
SW1#show mac address-table
      Mac Address Table
-----
Vlan    Mac Address      Type    Ports
----    -
1       0001.647b.3119   DYNAMIC Gig0/1
1       0004.9a6e.d870   DYNAMIC Gig0/1
1       0060.5c56.14d3   DYNAMIC Fa0/2
1       00d0.d3ad.9cab   DYNAMIC Fa0/1
SW1#
```

Ctrl+F6 to exit CLI focus

Copy

Paste

☐ Top

 SW2

Physical Config CLI Attributes

IOS Command Line Interface

```
%LINEPROTO-5-UPDOWN: Line protocol on Interface GigabitEthernet0/1, changed
state to up

%LINK-5-CHANGED: Interface FastEthernet0/1, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1, changed
state to up

%LINK-5-CHANGED: Interface FastEthernet0/2, changed state to up

%LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/2, changed
state to up

SW2>en
SW2>enable
SW2#show mac add
SW2#show mac address-table
      Mac Address Table
-----
Vlan    Mac Address      Type        Ports
----    -
1       0001.647b.3119   DYNAMIC     Fa0/2
1       0004.9a6e.d870   DYNAMIC     Fa0/1
1       0060.5c56.14d3   DYNAMIC     Gig0/1
1       00d0.d3ad.9cab   DYNAMIC     Gig0/1
SW2#
```

Ctrl+F6 to exit CLI focus

Copy Paste

☐ Top

6. Cấu hình Switch và các thiết bị đầu cuối

Overall FeedbackAssessment ItemsConnectivity Tests

Expand/Collapse AllShow Incorrect Items

Assessment Items	Status	Points	Component(s)	Feedback
Network				
Class-A				
Banner MOTD	Correct	2	Basic Security Co...	
Console Line		0	Other	
Password	Correct	1	Basic Security Co...	
Enable Secret	Correct	2	Basic Security Co...	
Host Name	Correct	1	Hostname Config...	
Ports				
Vlan1				
IP Address	Correct	7	IPv4 Host Address...	
Port Status	Correct	5	IPv4 Host Address...	
Subnet Mask	Correct	7	IPv4 Host Address...	
Service Password Encryption	Correct	1	Basic Security Co...	
Startup Config	Correct	2	Configuration Man...	
VTY Lines		0	Other	
VTY Line 0		0	Other	
Password	Correct	1	Basic Security Co...	
Class-B				
Banner MOTD	Correct	2	Basic Security Co...	
Console Line		0	Other	
Password	Correct	1	Basic Security Co...	
Enable Secret	Correct	2	Basic Security Co...	
Host Name	Correct	1	Hostname Config...	
Ports				
Vlan1				
IP Address	Correct	7	IPv4 Host Address...	
Port Status	Correct	5	IPv4 Host Address...	
Subnet Mask	Correct	7	IPv4 Host Address...	
Service Password Encryption	Correct	1	Basic Security Co...	
Startup Config	Correct	2	Configuration Man...	
VTY Lines		0	Other	
VTY Line 0		0	Other	
Password	Correct	1	Basic Security Co...	
Student-1				
Ports				
FastEthernet0				
IP Address	Correct	8	IPv4 Host Address...	
Subnet Mask	Correct	8	IPv4 Host Address...	
Student-2				
Ports				
FastEthernet0				
IP Address	Correct	8	IPv4 Host Address...	
Subnet Mask	Correct	8	IPv4 Host Address...	

Score: 100/100

Item Count: 24/24

Component	Items/Total	Score
Basic Security Configuration	10/10	14/14
Configuration Management	2/2	4/4
Hostname Configuration	2/2	2/2
IPv4 Host Address Configuration	10/10	70/70

Connectivity Tests: 6/6 10/10

Close

--- Hết ---