COMPUTER NETWORKS

Lap 2 - Build a Switch and Router Network

Solved by :

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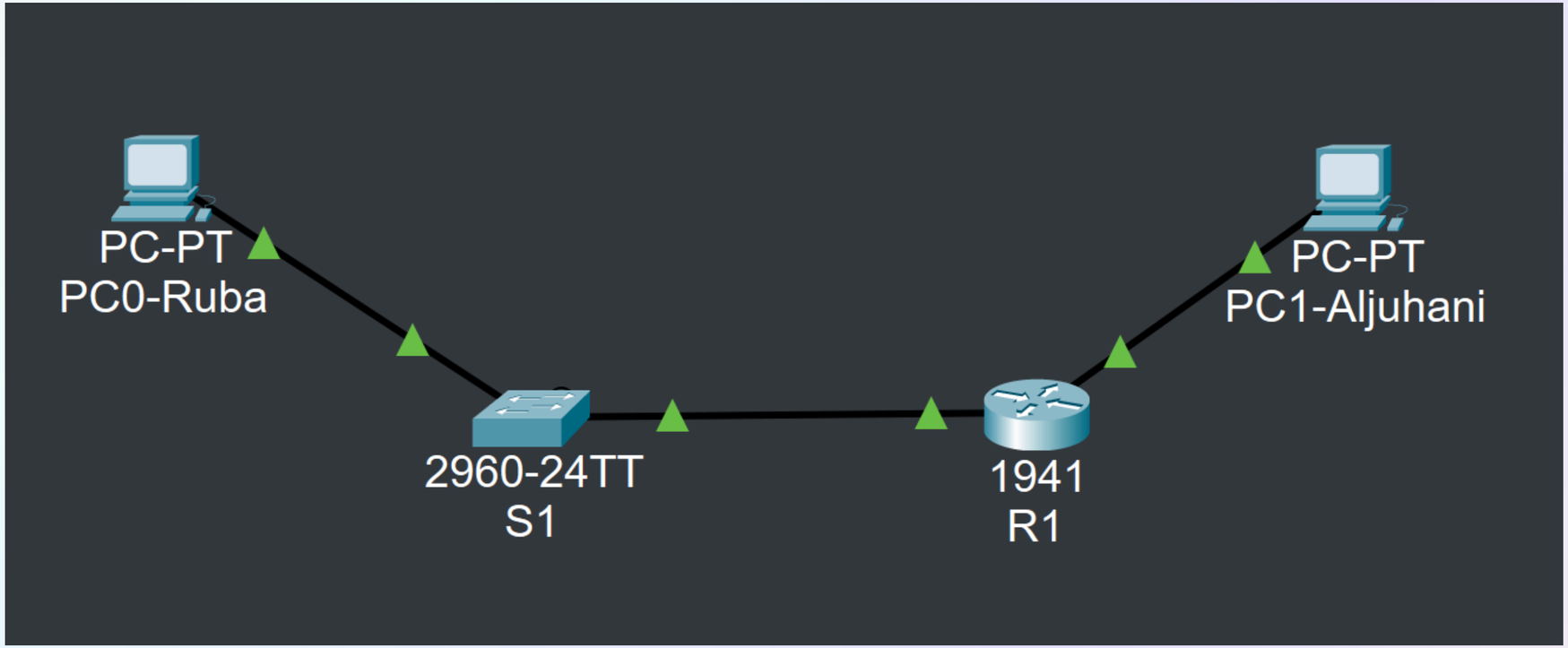
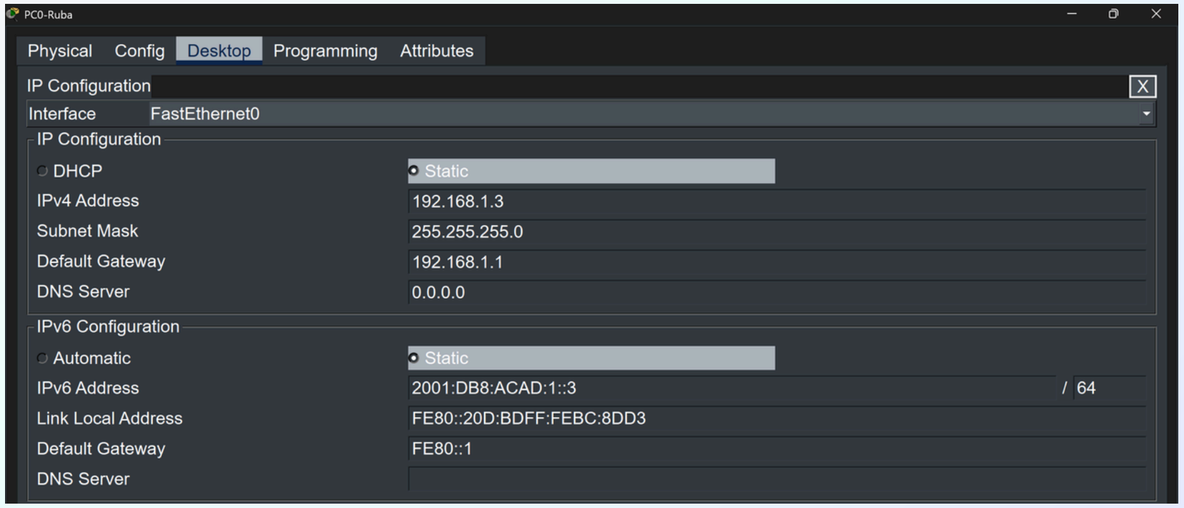
Step 1: Topology Setup

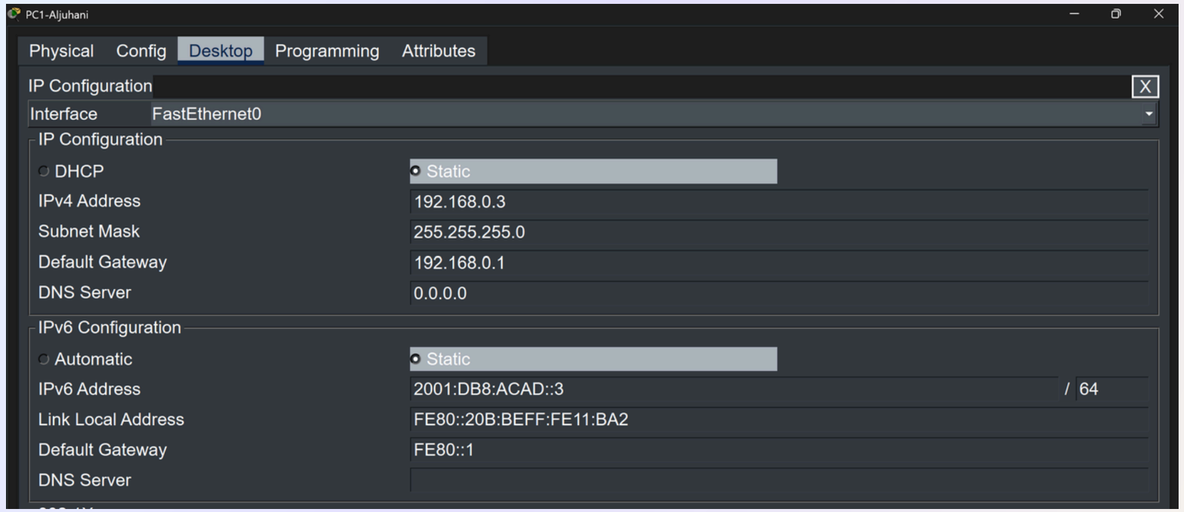
Connected the router, switch, and PCs using the correct cables according to the lab diagram



Step 2: PC Static IPs

Assigned IPv4 and IPv6 addresses to PC-0 and PC-1 based on the addressing table.





Step 3: Router Basic Configuration

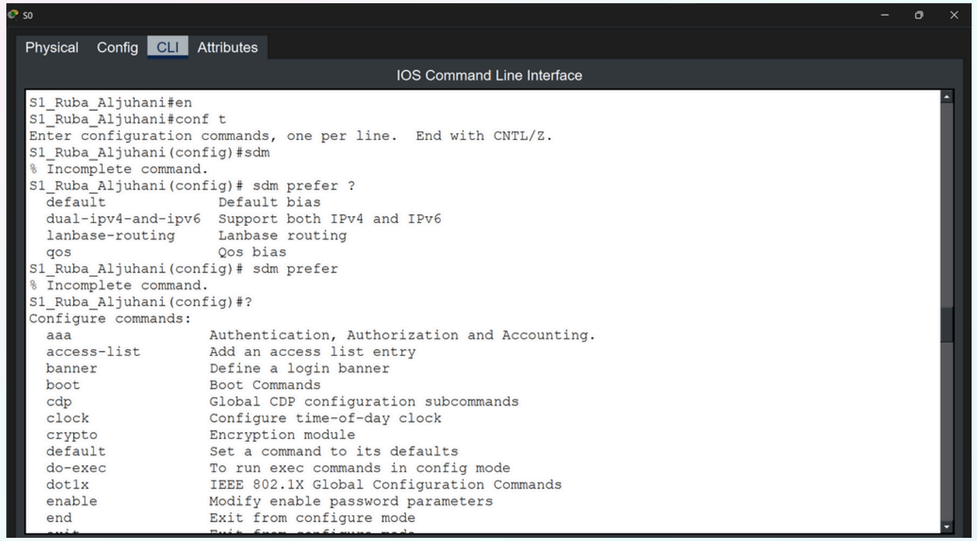
Set hostname R1_Ruba, configured IPv4/IPv6 addresses on interfaces G0/0/0 and G0/0/1, and enabled interfaces (no shutdown)

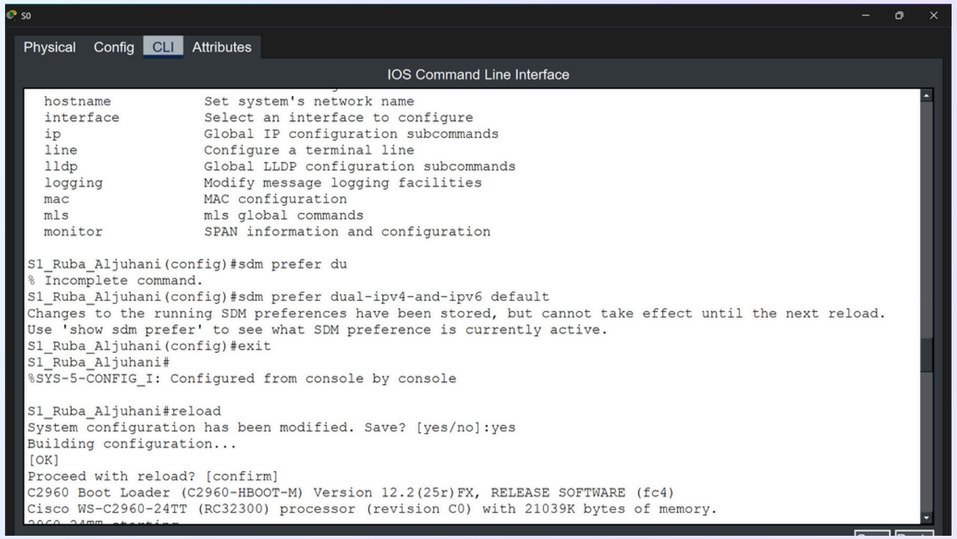
```
R1_Ruba_Aljuhani(config-if)#exit
R1_Ruba_Aljuhani(config)#int g0/1
R1_Ruba_Aljuhani(config-if)#ip ad
% Incomplete command.
R1_Ruba_Aljuhani(config-if)#ip address 192.168.1.1 255.255.255.0
R1_Ruba_Aljuhani(config-if)#ipv6 ad
% Incomplete command.
R1_Ruba_Aljuhani(config-if)#ipv6 address 2001:db8:acad:1::1/64
R1_Ruba_Aljuhani(config-if)#description Link to PC0-Ruba Network
R1_Ruba_Aljuhani(config-if)#no sh

R1_Ruba_Aljuhani(config-if)#
%LINK-5-CHANGED: Interface GigabitEthernet0/1, changed state to up

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

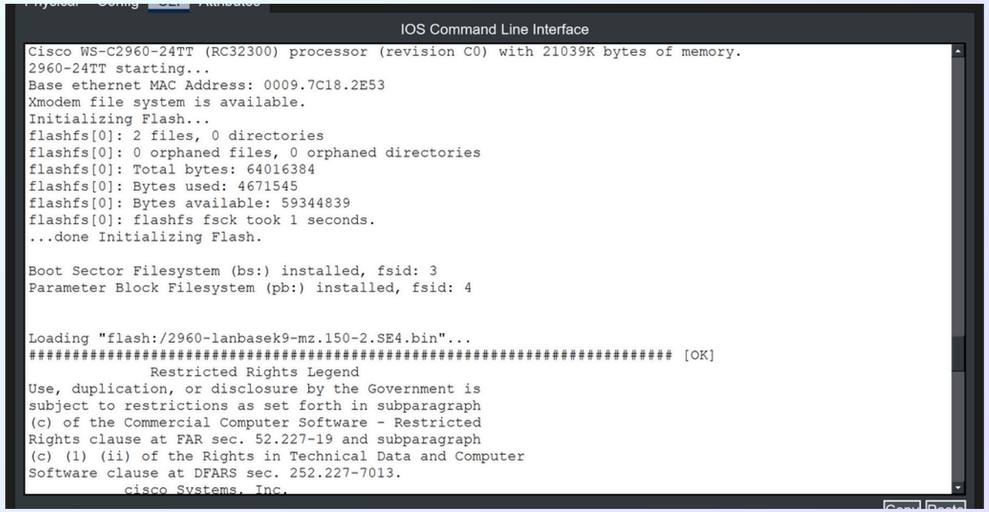
```
R1_Ruba_Aljuhani(config)#int GigabitEthernet ?
  <0-9>  GigabitEthernet interface number
R1_Ruba_Aljuhani(config)#int GigabitEthernet 0/?
  <0-28>  GigabitEthernet interface number
R1_Ruba_Aljuhani(config)#int GigabitEthernet 0/0
R1_Ruba_Aljuhani(config-if)#ip address 192.168.0.1?
A.B.C.D
R1_Ruba_Aljuhani(config-if)#ip address 192.168.0.1 255.255.255.0
R1_Ruba_Aljuhani(config-if)#ipv6 address 2001:db8:acad::1?
WORD  X:X:X:X::X  X:X:X:X::X/<0-128>
R1_Ruba_Aljuhani(config-if)#ipv6 address 2001:db8:acad::1/64
R1_Ruba_Aljuhani(config-if)#desc
% Incomplete command.
R1_Ruba_Aljuhani(config-if)#description Link to PC1-Aljuhani
R1_Ruba_Aljuhani(config-if)#no sh
```

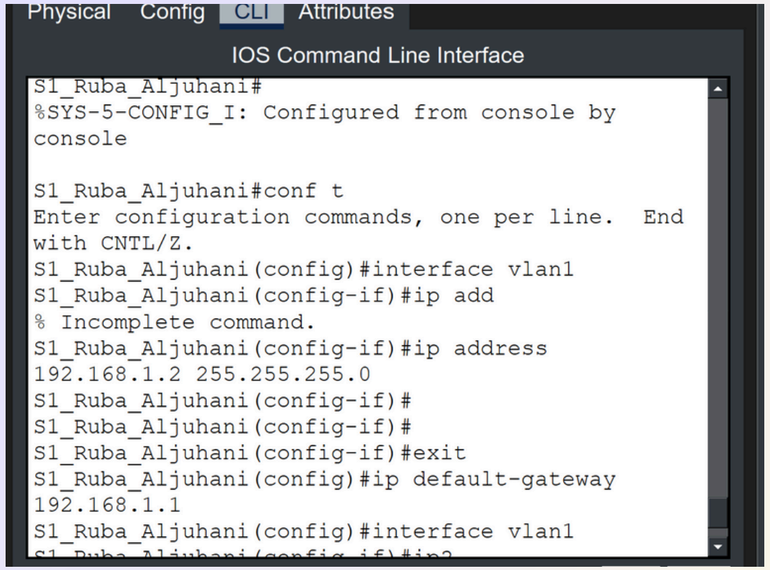
Step 4: Switch Configuration

Set hostname S1_Ruba, configured VLAN 1 IP, default gateway, enabled password encryption, created SSH user, and generated RSA keys,Vlan1



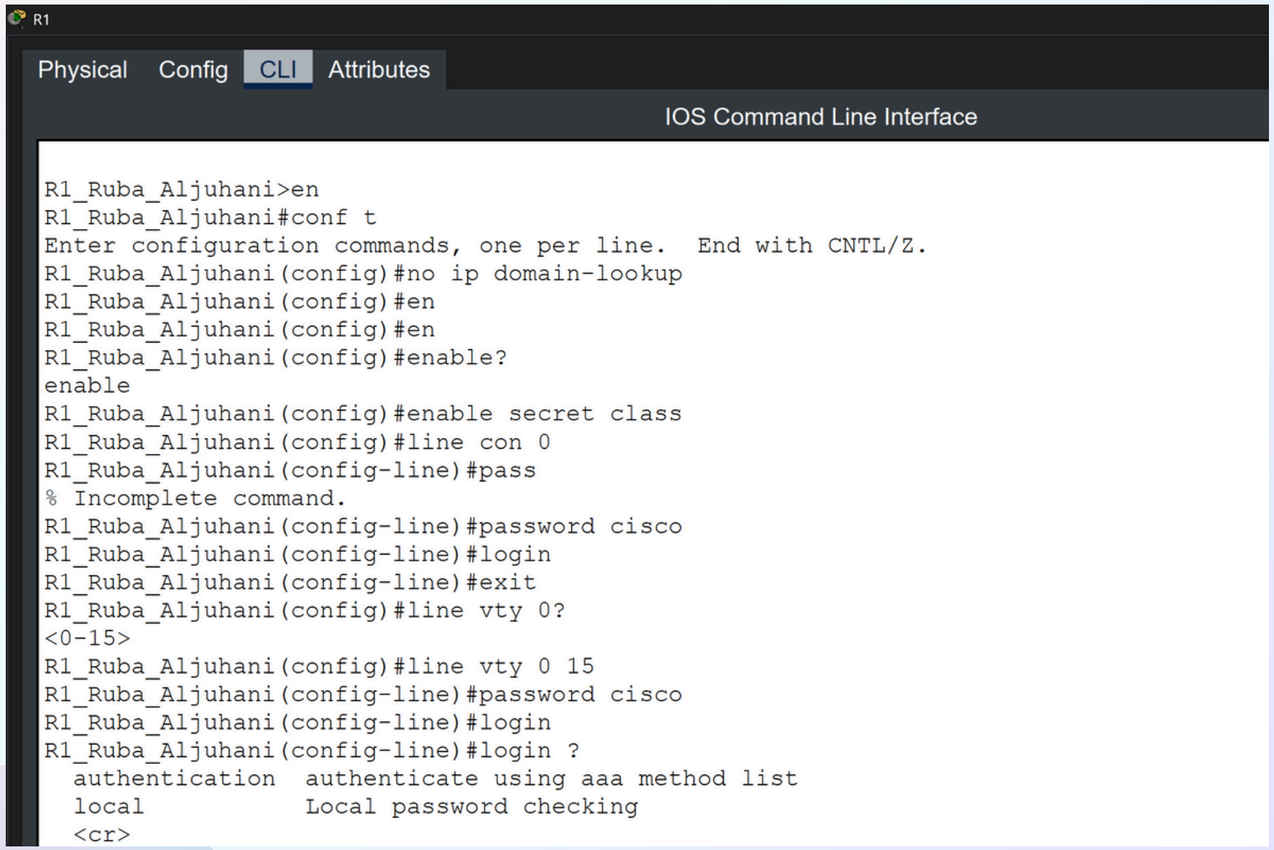


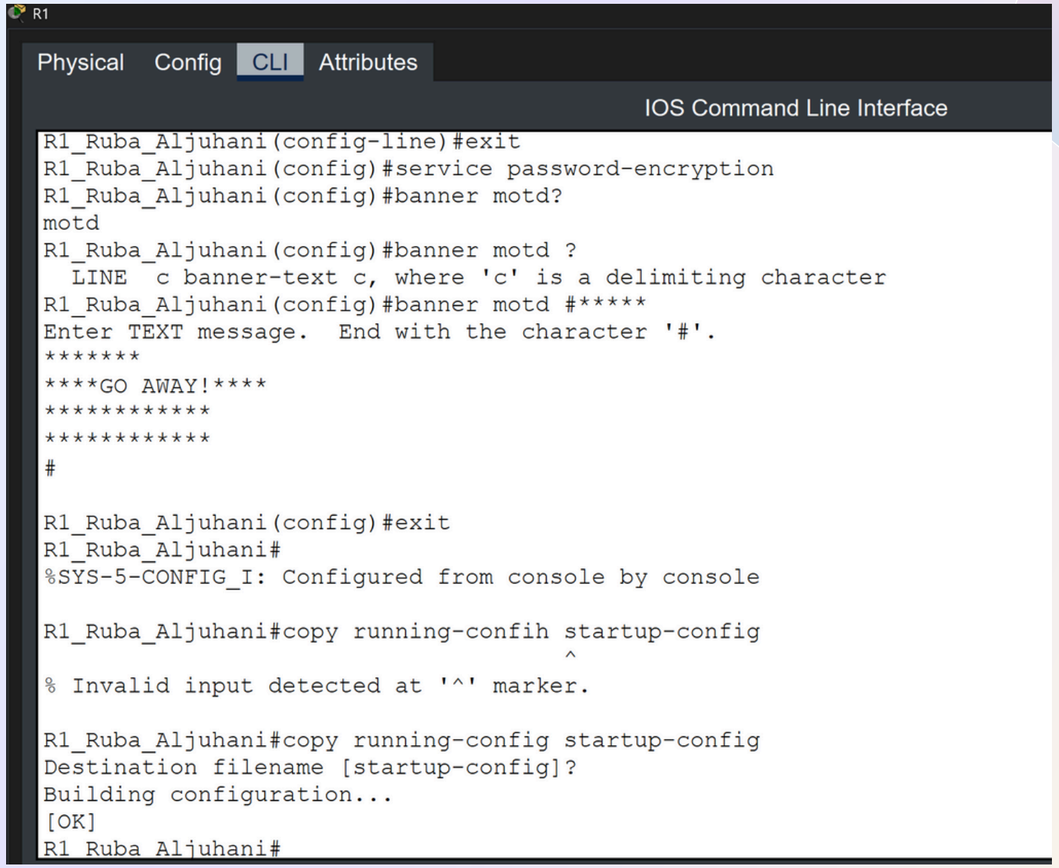




Step 5: Router Security & Encryption

Enabled service password-encryption, set enable secret, created a local user, generated RSA keys, and activated SSH version 2





Step 6: Connectivity Test

Ping between PC-A and PC-B succeeded, confirming full network connectivity