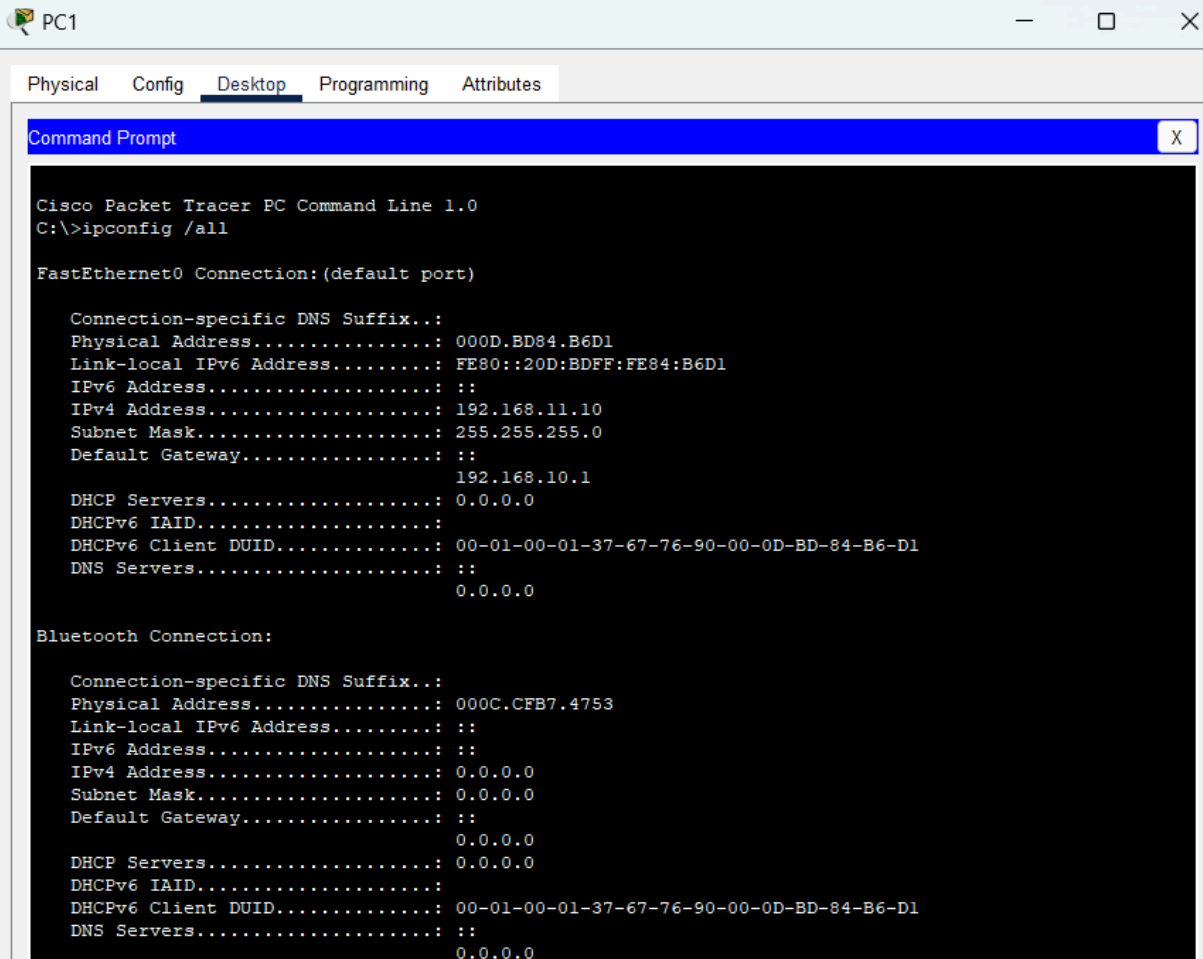


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Packet Tracer - Troubleshooting Default Gateway Issues

Find the default gateway for PC1 — PC4 using cmd: ipconfig /all

PC1:



The screenshot shows the PC1 Desktop tab in Cisco Packet Tracer. A Command Prompt window is open, displaying the output of the 'ipconfig /all' command. The output is divided into two sections: 'FastEthernet0 Connection: (default port)' and 'Bluetooth Connection:'. Each section lists various network parameters including DNS suffix, physical address, IPv6 and IPv4 addresses, subnet masks, and default gateways.

```
Cisco Packet Tracer PC Command Line 1.0
C:\>ipconfig /all

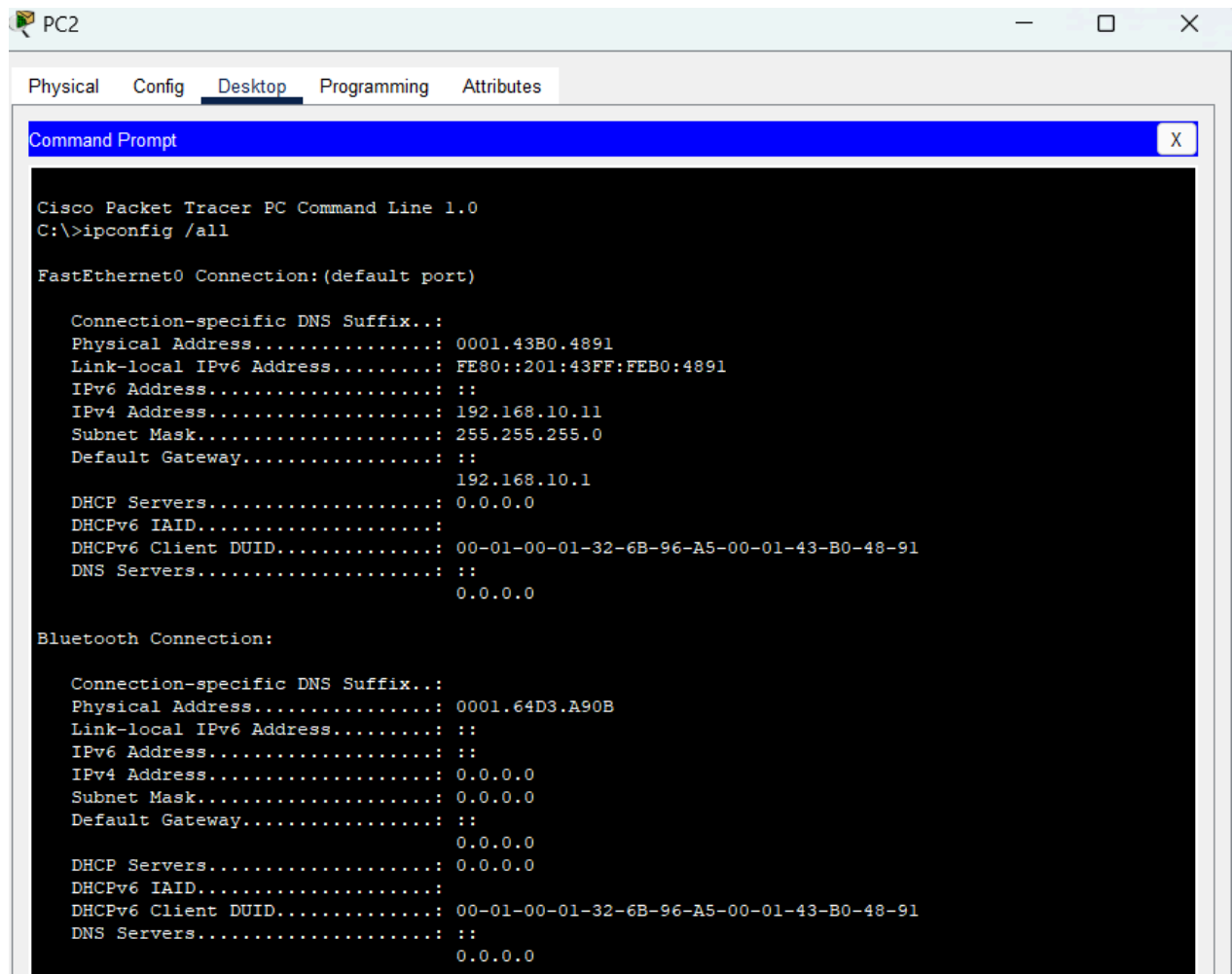
FastEthernet0 Connection: (default port)

    Connection-specific DNS Suffix...: 
    Physical Address. . . . .: 000D.BD84.B6D1
    Link-local IPv6 Address . . . . .: FE80::20D:BDFF:FE84:B6D1
    IPv6 Address. . . . .: ::
    IPv4 Address. . . . .: 192.168.11.10
    Subnet Mask . . . . .: 255.255.255.0
    Default Gateway. . . . .: ::
                               192.168.10.1
    DHCP Servers. . . . .: 0.0.0.0
    DHCPv6 IAID. . . . .: 
    DHCPv6 Client DUID. . . . .: 00-01-00-01-37-67-76-90-00-0D-BD-84-B6-D1
    DNS Servers. . . . .: ::
                               0.0.0.0

Bluetooth Connection:

    Connection-specific DNS Suffix...: 
    Physical Address. . . . .: 000C.CFB7.4753
    Link-local IPv6 Address . . . . .: ::
    IPv6 Address. . . . .: ::
    IPv4 Address. . . . .: 0.0.0.0
    Subnet Mask . . . . .: 0.0.0.0
    Default Gateway. . . . .: ::
                               0.0.0.0
    DHCP Servers. . . . .: 0.0.0.0
    DHCPv6 IAID. . . . .: 
    DHCPv6 Client DUID. . . . .: 00-01-00-01-37-67-76-90-00-0D-BD-84-B6-D1
    DNS Servers. . . . .: ::
                               0.0.0.0
```

PC2:



The screenshot shows a PC2 window with a 'Desktop' tab selected. Inside the Desktop tab is a 'Command Prompt' window. The Command Prompt displays the output of the 'ipconfig /all' command, showing network configuration for both FastEthernet0 and Bluetooth connections. The FastEthernet0 connection is configured with an IPv4 address of 192.168.10.11 and a default gateway of 192.168.10.1. The Bluetooth connection is currently unconfigured, showing 0.0.0.0 for all IP-related fields.

```
Cisco Packet Tracer PC Command Line 1.0
C:\>ipconfig /all

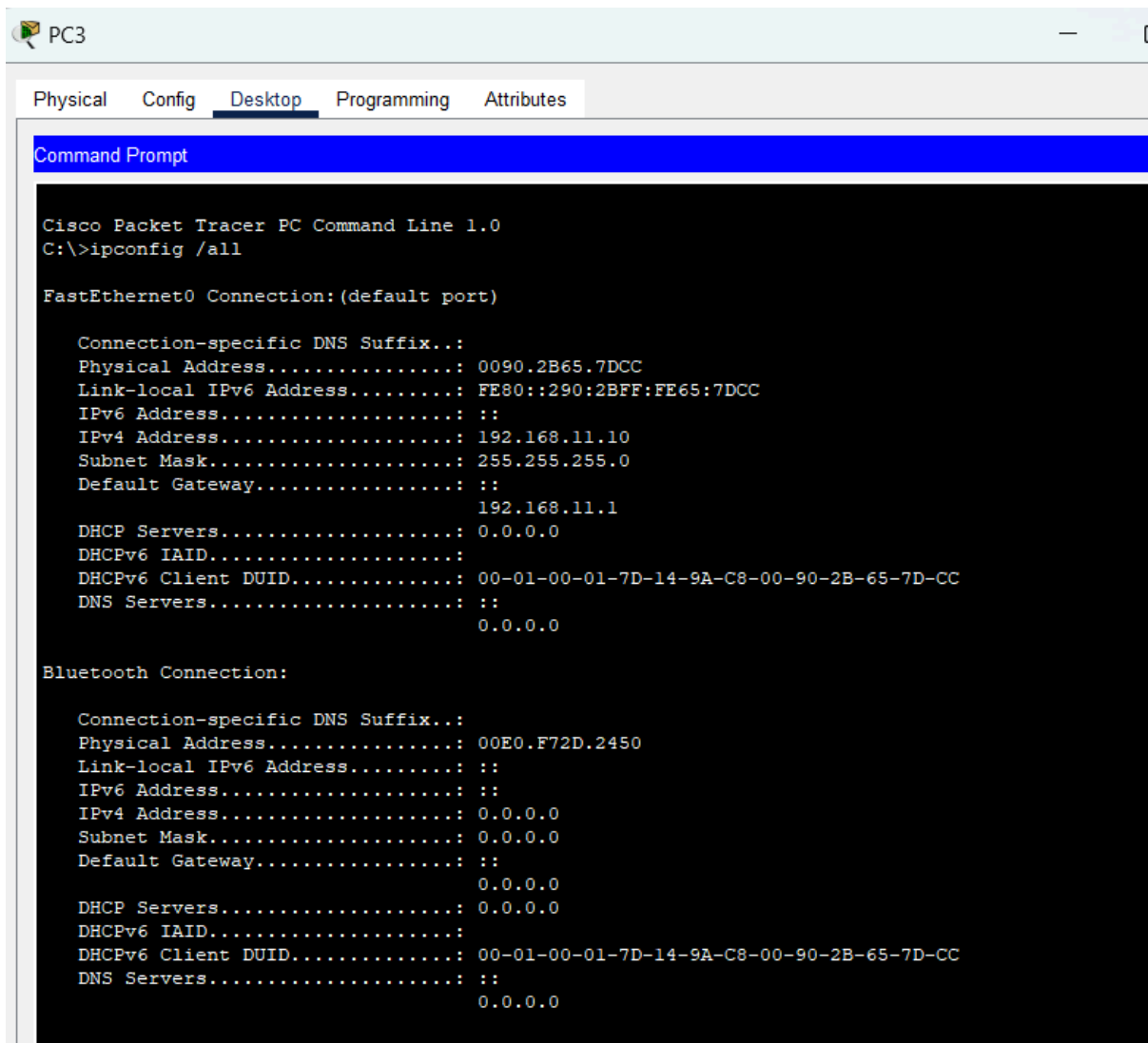
FastEthernet0 Connection:(default port)

    Connection-specific DNS Suffix...:
    Physical Address...: 0001.43B0.4891
    Link-local IPv6 Address...: FE80::201:43FF:FEB0:4891
    IPv6 Address...: ::
    IPv4 Address...: 192.168.10.11
    Subnet Mask...: 255.255.255.0
    Default Gateway...: ::
                        192.168.10.1
    DHCP Servers...: 0.0.0.0
    DHCPv6 IAID...:
    DHCPv6 Client DUID...: 00-01-00-01-32-6B-96-A5-00-01-43-B0-48-91
    DNS Servers...: ::
                        0.0.0.0

Bluetooth Connection:

    Connection-specific DNS Suffix...:
    Physical Address...: 0001.64D3.A90B
    Link-local IPv6 Address...: ::
    IPv6 Address...: ::
    IPv4 Address...: 0.0.0.0
    Subnet Mask...: 0.0.0.0
    Default Gateway...: ::
                        0.0.0.0
    DHCP Servers...: 0.0.0.0
    DHCPv6 IAID...:
    DHCPv6 Client DUID...: 00-01-00-01-32-6B-96-A5-00-01-43-B0-48-91
    DNS Servers...: ::
                        0.0.0.0
```

PC3:



The screenshot shows a PC window titled 'PC3' with a light blue header bar. Below the header is a tabbed interface with four tabs: 'Physical', 'Config', 'Desktop' (which is selected and highlighted in blue), and 'Attributes'. The 'Desktop' tab contains a 'Command Prompt' window with a black background and white text. The text in the Command Prompt shows the output of the 'ipconfig /all' command, displaying network configuration details for both FastEthernet0 and Bluetooth connections. The FastEthernet0 section shows a physical address of 0090.2B65.7DCC, a link-local IPv6 address of FE80::290:2BFF:FE65:7DCC, and an IPv4 address of 192.168.11.10. The Bluetooth section shows a physical address of 00E0.F72D.2450 and an IPv4 address of 0.0.0.0. Both sections also list DHCP servers, IAID, Client DUID, and DNS servers.

```
Cisco Packet Tracer PC Command Line 1.0
C:\>ipconfig /all

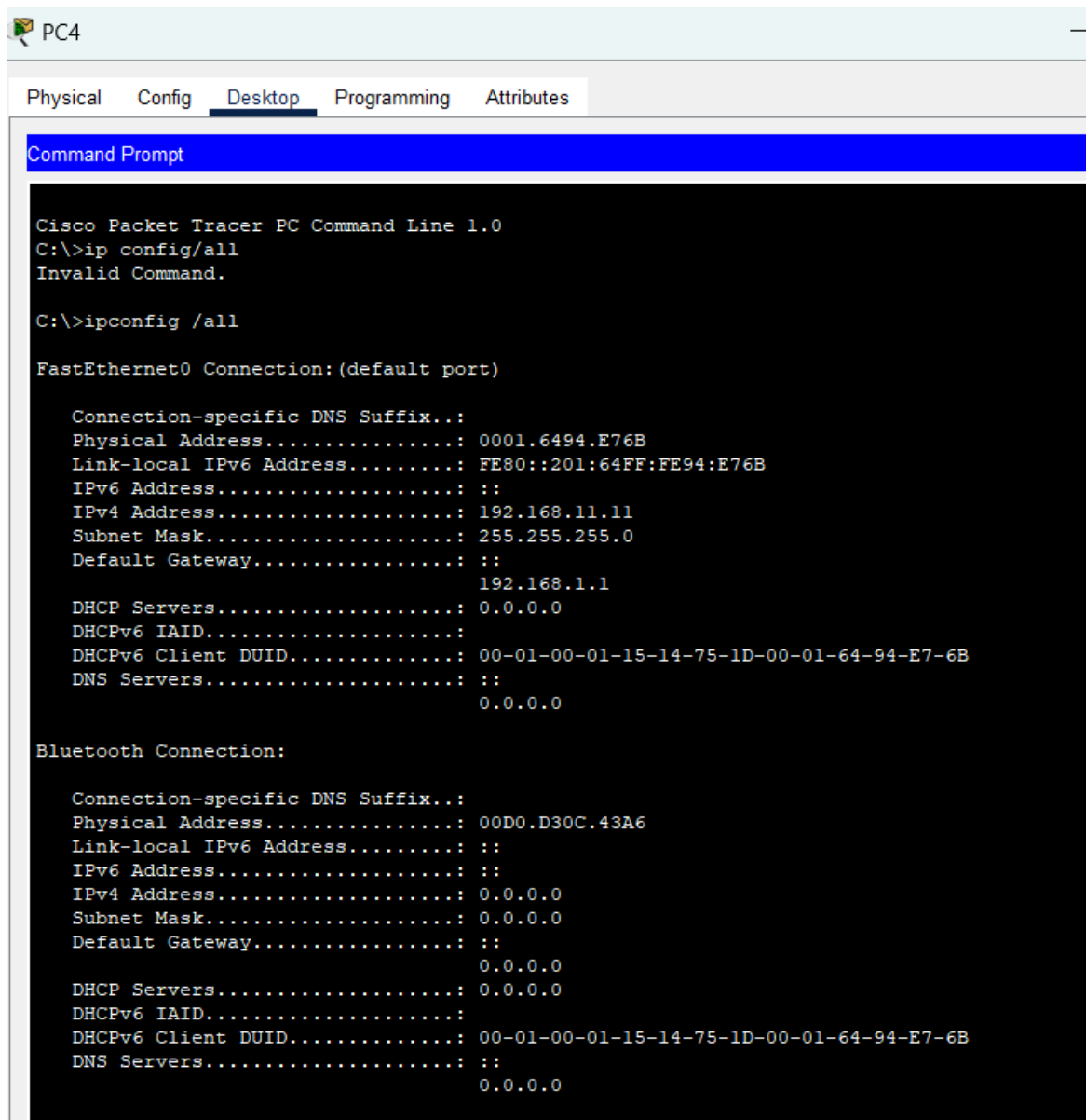
FastEthernet0 Connection:(default port)

Connection-specific DNS Suffix...:
Physical Address.....: 0090.2B65.7DCC
Link-local IPv6 Address.....: FE80::290:2BFF:FE65:7DCC
IPv6 Address.....: ::
IPv4 Address.....: 192.168.11.10
Subnet Mask.....: 255.255.255.0
Default Gateway.....: ::
                        192.168.11.1
DHCP Servers.....: 0.0.0.0
DHCPv6 IAID.....:
DHCPv6 Client DUID.....: 00-01-00-01-7D-14-9A-C8-00-90-2B-65-7D-CC
DNS Servers.....: ::
                        0.0.0.0

Bluetooth Connection:

Connection-specific DNS Suffix...:
Physical Address.....: 00E0.F72D.2450
Link-local IPv6 Address.....: ::
IPv6 Address.....: ::
IPv4 Address.....: 0.0.0.0
Subnet Mask.....: 0.0.0.0
Default Gateway.....: ::
                        0.0.0.0
DHCP Servers.....: 0.0.0.0
DHCPv6 IAID.....:
DHCPv6 Client DUID.....: 00-01-00-01-7D-14-9A-C8-00-90-2B-65-7D-CC
DNS Servers.....: ::
                        0.0.0.0
```

PC4:



Yellow treated as WRONG

Device	Interface	IP address	Subnet Mask	Default gateway	Actual IP address	Actual Subnet Mask
R1	G0/0	192.168.10.1	255.255.255.0	N/A	x	x
	G0/1	192.168.11.1	255.255.255.0	N/A	x	x
S1	VLAN1	192.168.10.2	255.255.255.0		x	x
S2	VLAN1	192.168.11.1	255.255.255.0		x	x
PC1	NIC	192.168.10.10	255.255.255.0	192.168.10.1	192.168.11.10	255.255.255.0
PC2	NIC	192.168.10.11	255.255.255.0	192.168.10.1	192.168.10.11	255.255.255.0
PC3	NIC	192.168.11.10	255.255.255.0	192.168.11.1	192.168.11.10	255.255.255.0
PC4	NIC	192.168.11.11	255.255.255.0	192.168.1.1	192.168.11.11	255.255.255.0

-> We detected that:

- PC1 has the wrong ip address
- PC4 has the wrong default gateway

Get S1 and S2 information: using CLI

S1: VLAN1 shows IP address but no default gateway.

```
interface Vlan1
ip address 192.168.10.2 255.255.255.0
!
```

S2: VLAN1 shows no IP address and a default gateway of 192.168.11.1

```
interface Vlan1
no ip address
!
ip default-gateway 192.168.11.1
!
```

Device	Interface	IP address	Subnet Mask	Default gateway	Actual IP address	Actual Subnet Mask
R1	G0/0	192.168.10.1	255.255.255.0	N/A	x	x
	G0/1	192.168.11.1	255.255.255.0	N/A	x	x
S1	VLAN1	192.168.10.2	255.255.255.0		192.168.10.2	/24
S2	VLAN1	192.168.11.1	255.255.255.0	192.168.11.1	x	x
PC1	NIC	192.168.10.10	255.255.255.0	192.168.10.1	192.168.11.10	255.255.255.0
PC2	NIC	192.168.10.11	255.255.255.0	192.168.10.1	192.168.10.11	255.255.255.0
PC3	NIC	192.168.11.10	255.255.255.0	192.168.11.1	192.168.11.10	255.255.255.0
PC4	NIC	192.168.11.11	255.255.255.0	192.168.1.1	192.168.11.11	255.255.255.0

FIX

1. IP Configuration and change the IP address to 192.168.10.10

The screenshot shows a configuration window for PC1 with tabs for Physical, Config, Desktop, Programming, and Attributes. The Desktop tab is active, displaying the IP Configuration section for the FastEthernet0 interface. The IP Configuration section has two radio buttons: DHCP (unselected) and Static (selected). Below these are text fields for IPv4 Address (192.168.10.10), Subnet Mask (255.255.255.0), Default Gateway (192.168.10.1), and DNS Server (0.0.0.0). The IPv6 Configuration section also has two radio buttons: Automatic (unselected) and Static (selected). Below these are text fields for IPv6 Address (empty), Link Local Address (FE80::20D:BDFF:FE84:B6D1), Default Gateway (empty), and DNS Server (empty). The 802.1X section has a checkbox for Use 802.1X Security (unchecked) and a dropdown menu for Authentication (MD5). A Top button is located at the bottom left.

PC1

Physical Config **Desktop** Programming Attributes

IP Configuration X

Interface FastEthernet0

IP Configuration

☐ DHCP ☒ Static

IPv4 Address 192.168.10.10

Subnet Mask 255.255.255.0

Default Gateway 192.168.10.1

DNS Server 0.0.0.0

IPv6 Configuration

☐ Automatic ☒ Static

IPv6 Address /

Link Local Address FE80::20D:BDFF:FE84:B6D1

Default Gateway

DNS Server

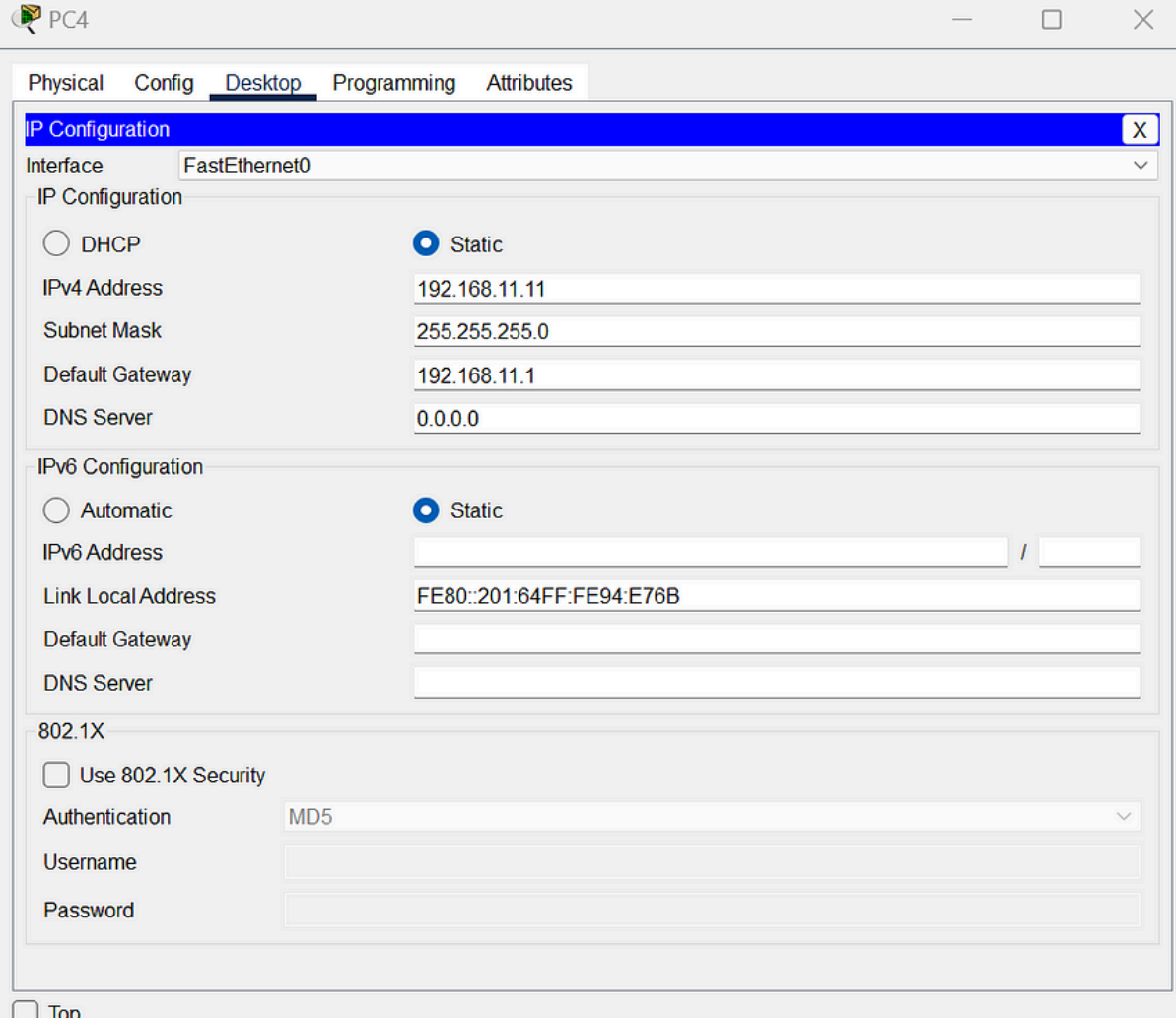
802.1X

☐ Use 802.1X Security

Authentication MD5

☐ Top

2. IP Configuration and change the default gateway to 192.168.11.1



PC4

Physical Config **Desktop** Programming Attributes

IP Configuration [X]

Interface: FastEthernet0

IP Configuration

☐ DHCP ☒ Static

IPv4 Address: 192.168.11.11

Subnet Mask: 255.255.255.0

Default Gateway: 192.168.11.1

DNS Server: 0.0.0.0

IPv6 Configuration

☐ Automatic ☒ Static

IPv6 Address: /

Link Local Address: FE80::201:64FF:FE94:E76B

Default Gateway:

DNS Server:

802.1X

☐ Use 802.1X Security

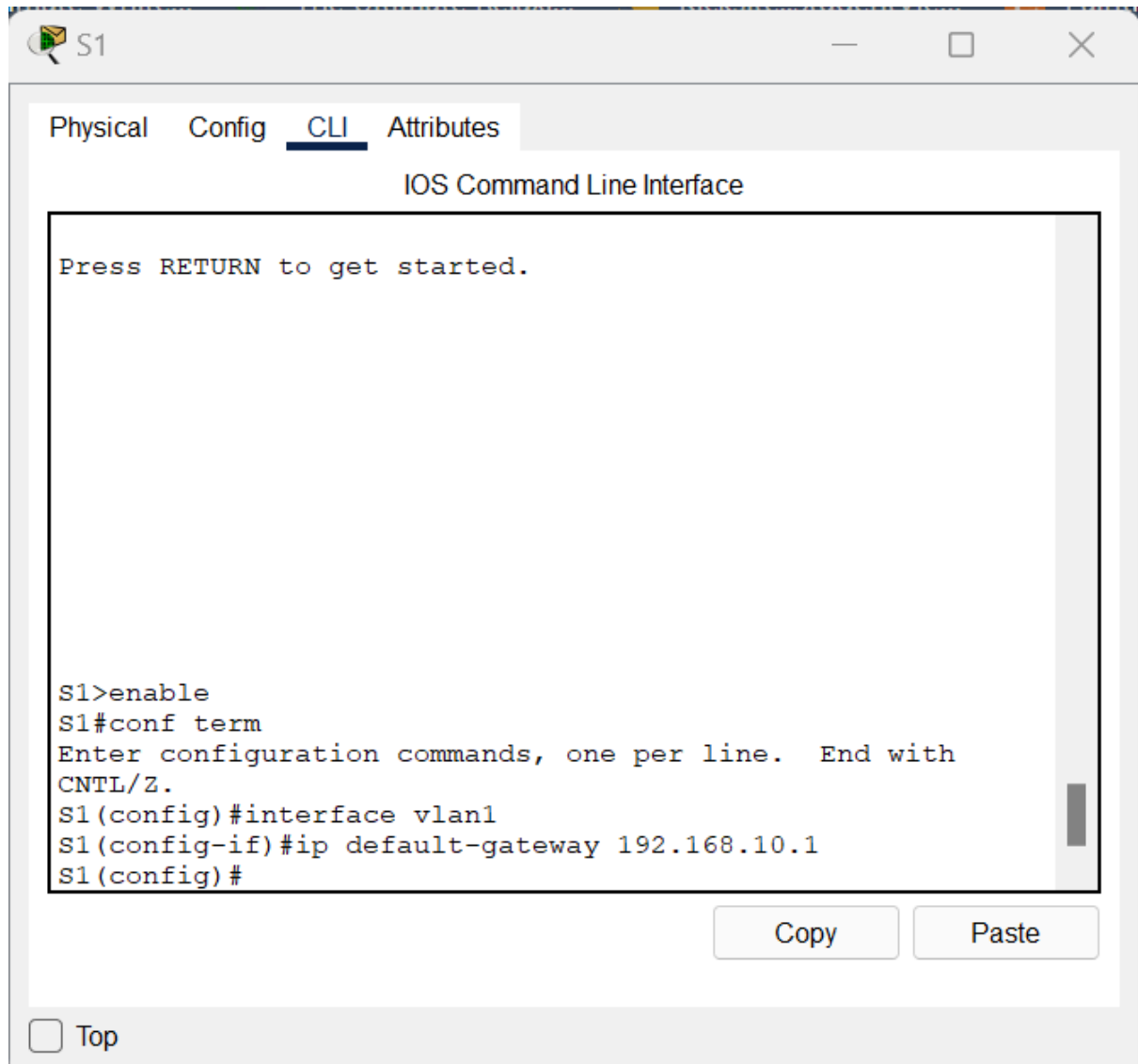
Authentication: MD5

Username:

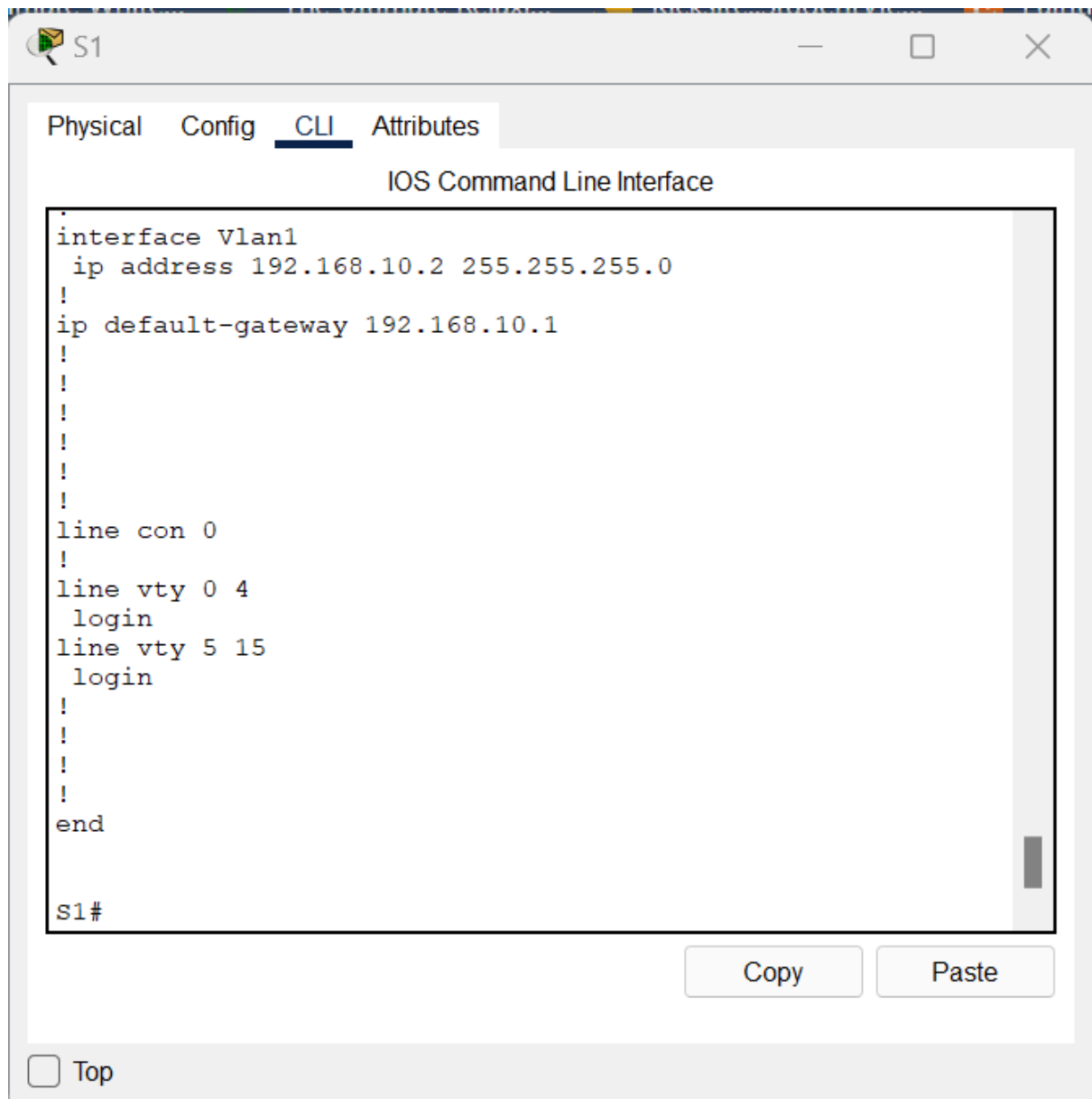
Password:

☐ Top

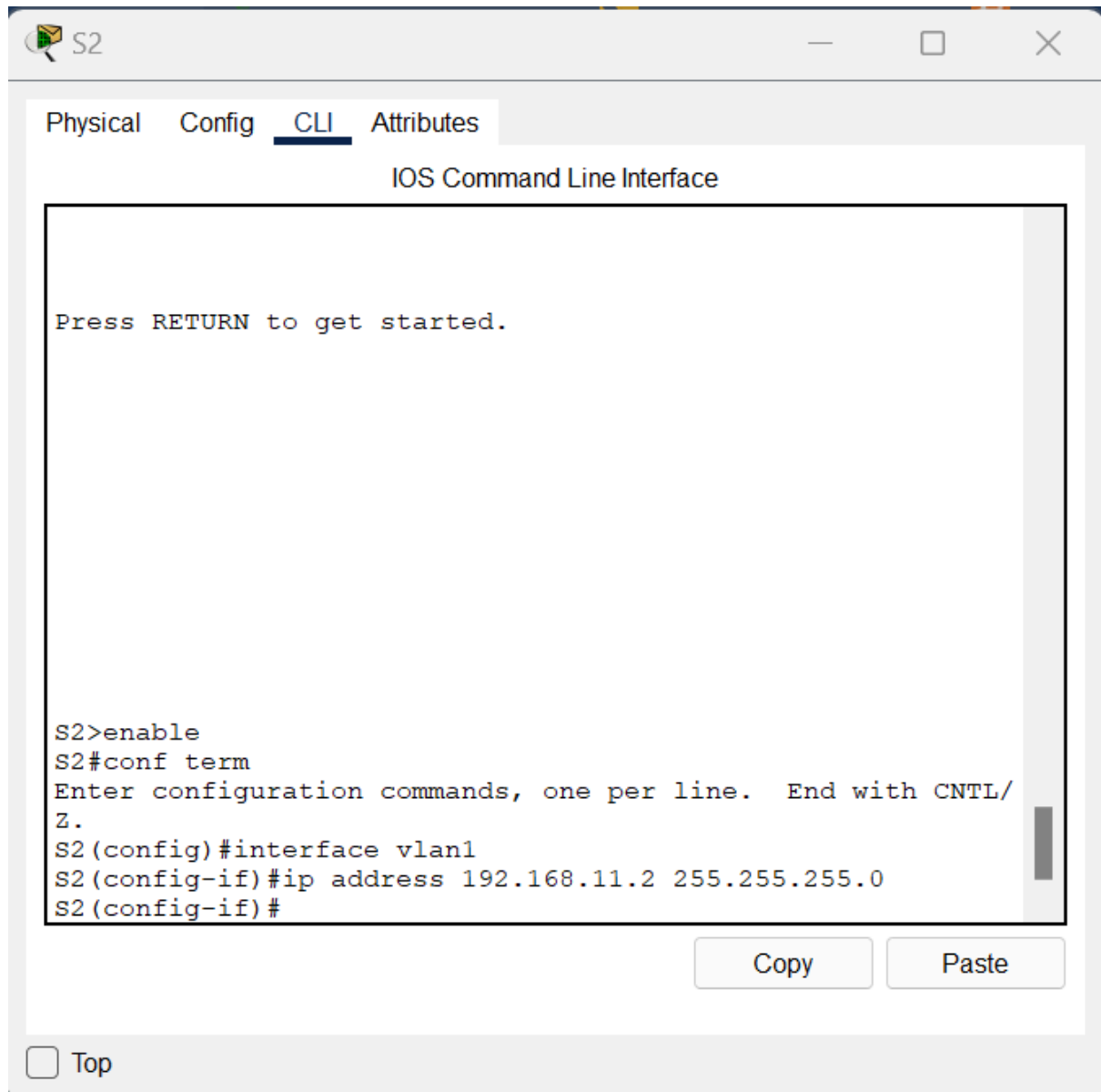
3. Go to S1 CLI and set the default gateway to 192.168.10.1



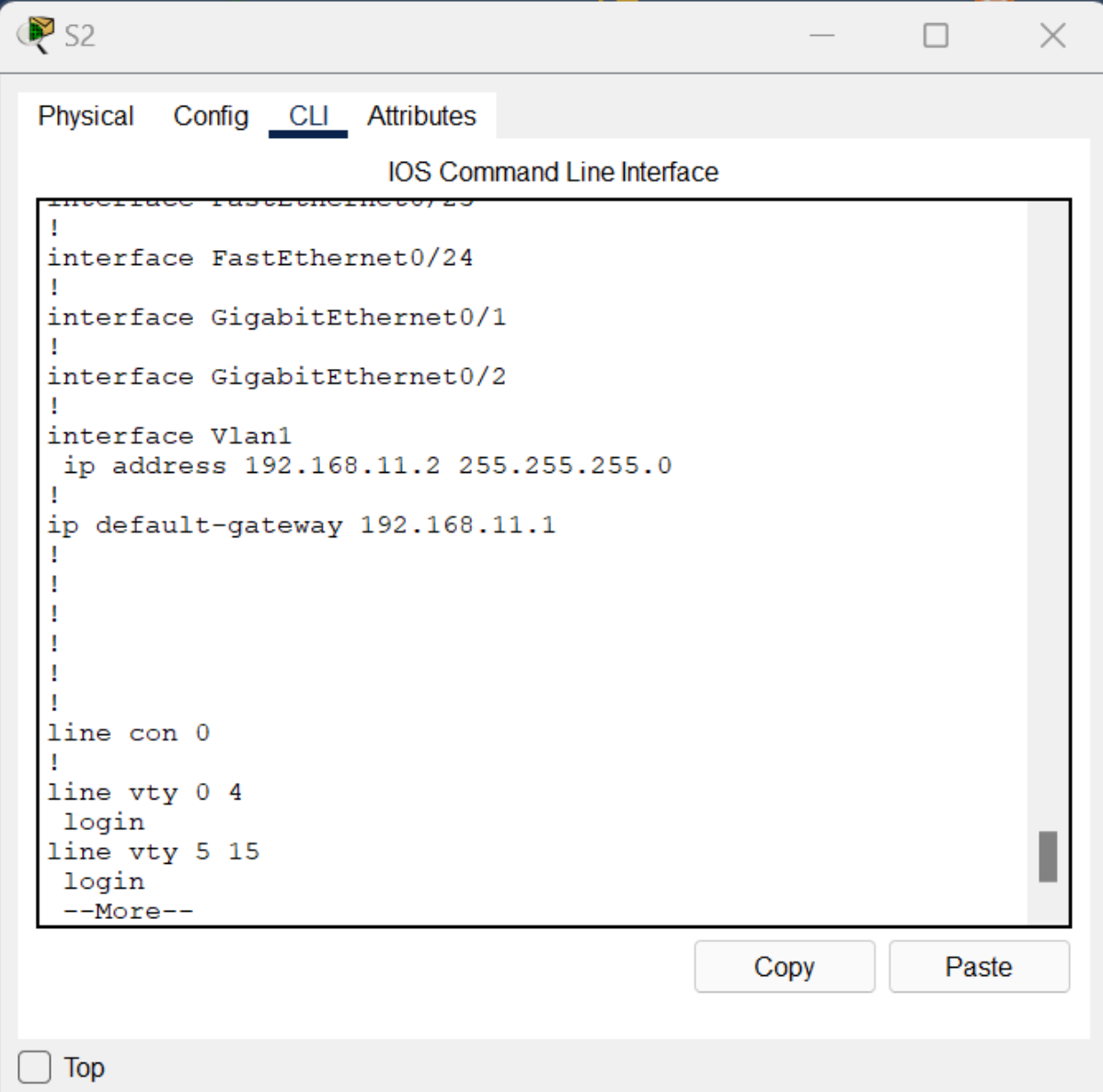
4. Use 'show running-config' to verify changes for S1



5. Go to S2 CLI and set the IP address and subnet mask to 192.168.11.2 and 255.255.255.0



6. Check the changes



The screenshot shows a window titled 'S2' with a tabbed interface. The 'CLI' tab is selected, displaying the 'IOS Command Line Interface' configuration. The configuration text is as follows:

```
!
interface FastEthernet0/24
!
interface GigabitEthernet0/1
!
interface GigabitEthernet0/2
!
interface Vlan1
  ip address 192.168.11.2 255.255.255.0
!
ip default-gateway 192.168.11.1
!
!
!
!
!
line con 0
!
line vty 0 4
  login
line vty 5 15
  login
--More--
```

Below the configuration text, there are two buttons: 'Copy' and 'Paste'. At the bottom left of the window, there is a checkbox labeled 'Top'.

After fixed:

Device	Interface	IP address	Subnet Mask	Default gateway	Actual IP address	Actual Subnet Mask
R1	G0/0	192.168.10.1	255.255.255.0	N/A	x	x
	G0/1	192.168.11.1	255.255.255.0	N/A	x	x
S1	VLAN1	192.168.10.2	255.255.255.0	192.168.10.1	192.168.10.2	/24
S2	VLAN1	192.168.11.1	255.255.255.0	192.168.11.1	192.168.11.2	255.255.255.0
PC1	NIC	192.168.10.10	255.255.255.0	192.168.10.1	192.168.11.10	255.255.255.0
PC2	NIC	192.168.10.11	255.255.255.0	192.168.10.1	192.168.10.11	255.255.255.0
PC3	NIC	192.168.11.10	255.255.255.0	192.168.11.1	192.168.11.10	255.255.255.0
PC4	NIC	192.168.11.11	255.255.255.0	192.168.11.1	192.168.11.11	255.255.255.0

TEST AND VERIFYING:

Test	Successful	Issue	Solution	Verified
PC1 to PC2	NO	PC 1 incorrect IP	Correct PC1 IP	YES
PC1 to S1	NO	PC 1 incorrect IP	Correct PC1 IP	YES
PC1 to R1	YES	PC 1 incorrect IP	Correct PC1 IP	YES
PC2 to S1	YES			
PC2 to R1	YES			
PC3 to S2	NO	S2 didn't have IP	Set IP for S2	YES
PC3 to R1	YES			
PC4 to S2	NO	S2 didn't have IP	Set IP for S2	YES
PC4 to R1	YES			
PC1 to PC3	YES			
PC3 to PC4	YES			