

ITN Final Skills Exam (PTSA)

ITN (Version 7.00) Final PT Skills Assessment (PTSA) Exam Answers

Topology



ITN Final PT Skills Assessment (PTSA)

Device Names Table

You will receive one of three possible scenarios. In order to use the logical topology diagram that is provided with the instructions, use the device names in the Device Names Table.

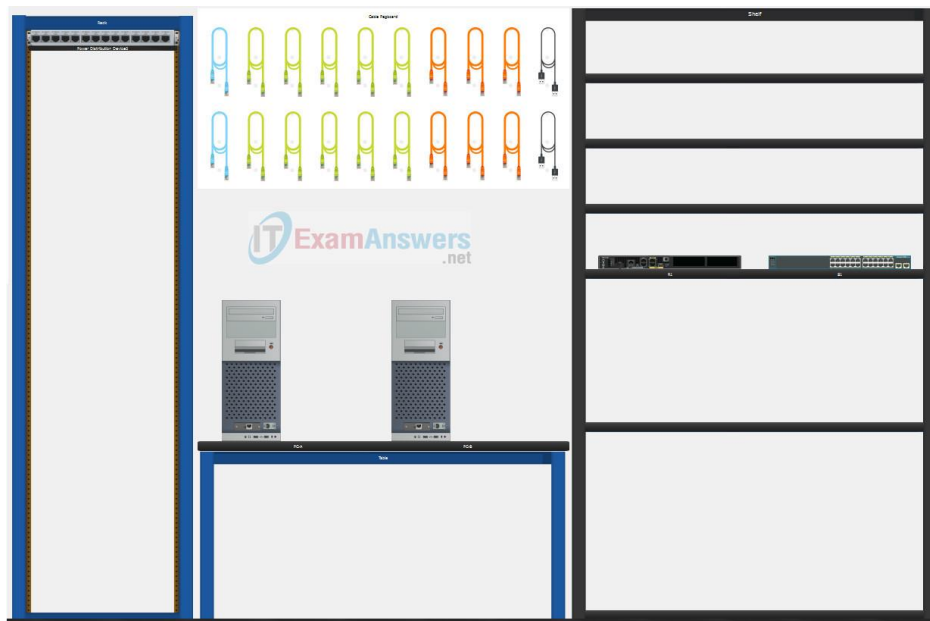
Topology Diagram Name	Your Scenario Name
R1	Router-A
S1	Switch-A
PC-A	Host-A
PC-B	Host-B

Addressing Requirements Table

Item	Requirements
Network Address	192.168.10.0/24
LAN 1 subnet host requirements	100
LAN 2 subnet host requirements	50

Item	Requirements
Router-A G0/0/1	First host address in LAN 1 subnet
Router-A G0/0/0	First host address in LAN 2 subnet
Switch-A SVI	Second host address in LAN 1 subnet
Host-A	Last host address in LAN 1 subnet
Host-B	Last host address in LAN 2 subnet

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A few things to keep in mind while completing this activity:

1. Do not use the browser **Back** button or close or reload any exam windows during the exam.
2. Do not close Packet Tracer when you are done. It will close automatically.
3. Click the **Submit Assessment** button in the browser window to submit your work.

Assessment Objectives

- **Part 1: Build the Network**
- **Part 2: Develop an IP Addressing Scheme**
- **Part 3: Configure Basic Device Settings**
- **Part 4: Configure Security Settings on Router-A and Switch-A**
- **Part 5: Configure the Hosts and Verify Connectivity**

Instructions

In this assessment you will configure the **Router-A** router and **Switch-A** switch, as you have done in the activities in this course. You will also connect two PCs using a switch and a router that are in the main wiring closet. You will subnet the **192.168.10.0/24** network to provide IPv4 addresses for two subnets that will support the required number of hosts. The larger subnet (LAN 1) requires **100** hosts and the smaller subnet (LAN 2) requires **50** hosts.

Part 1: Build the Network

- a. Build the network according to the logical topology by placing the required equipment in the wiring closet equipment rack.
- b. Cable the network devices in the closet as shown in the topology diagram.
- c. Connect the hosts as shown in the topology diagram.

Part 2: Develop an IP Addressing Scheme

In this part of the assessment, you will develop an IP addressing scheme. You will subnet an IPv4 network to create two subnets with the required number of hosts. You will also subnet an IPv6 network. You will then assign the addresses according to the requirements below.

Work with the following information:

- IPv4 Network: **192.168.10.0/24**
 - Required number of hosts in IPv4 LAN 1: **100**
 - Required number of hosts in IPv4 LAN 2: **50**
- a. Record your subnet assignments according to the following requirements.
 - 1) Assign the first IPv4 address of each subnet to a router interface
 - LAN 1 is hosted on **Router-A G0/0/1**
 - LAN 2 is hosted on **Router-A G0/0/0**
 - 2) Assign the last IPv4 address of each subnet to the PC NIC.
 - 3) Assign the second IPv4 address of LAN 1 to **Switch-A SVI**.

Part 3: Configure Basic Device Settings

Network devices must be configured over a direct console connection.
Connectivity between the hosts should be established.

Step 1: Configure Basic Settings

- a. Disable DNS lookup on **Router-A** and **Switch-A**
- b. Configure router hostname using the name **Router-A**.
- c. Configure switch hostname using the name **Switch-A**.
- d. Configure an appropriate banner on **Router-A** and **Switch-A**.
- e. Allow console logins with the password **C@nsPassw!**

Step 2: Configure Interfaces

- a. Configure **Router-A** G0/0/0 and G0/0/1 interfaces using the addressing from the previous part of this assessment:
 - Interface description
 - IPv4 address / subnet mask
- b. Configure the **Switch-A** VLAN 1 SVI interface using the addressing from the previous part of this assessment:
 - Interface description
 - IPv4 address / subnet mask
 - The switch should be reachable from devices on other networks.

Part 4: Configure Security Settings on Router-A and Switch-A

Step 1: Configure enhanced password security

- a. Configure **ThisisaSecret** as the encrypted privileged EXEC password
- b. Encrypt all plaintext passwords
- c. Set minimum password length to **10** on **Router-A**.

Step 2: Configure SSH on Router-A and Switch-A

- a. Configure **netsec.com** as the domain name
- b. Configure a local user netadmin with the secret password **Ci\$co12345**
- c. Set login on vty lines to use local database.
- d. Configure the vty lines to accept SSH access only.
- e. Generate an RSA crypto key using 1024 bits modulus.

Step 3: Secure switch ports on Switch-A

- a. Shut down **all** unused ports on **Switch-A**.
- b. Enter descriptions for all unused switch ports to indicate that they are intentionally shutdown.

Part 5: Configure the Hosts and Verify Connectivity

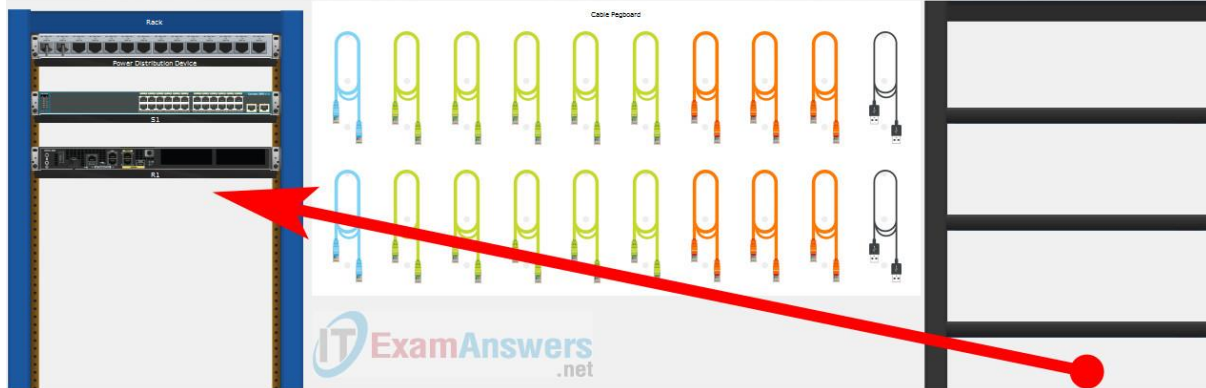
Configure both hosts with the IPv4 addresses that were assigned in Part 2 of this assessment.

ID: 020

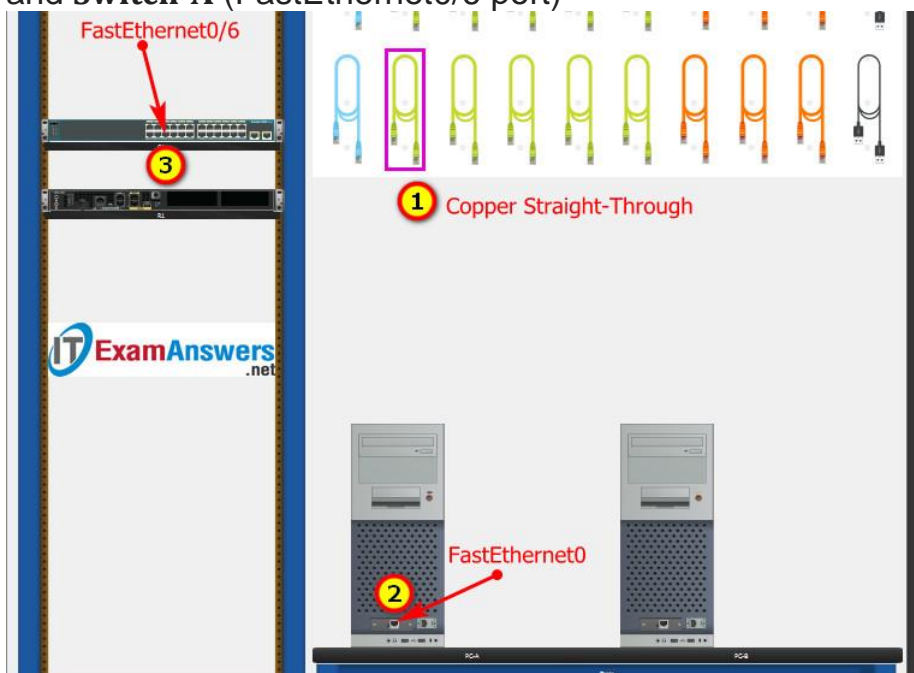
Answers Key

Part 1: Build the Network

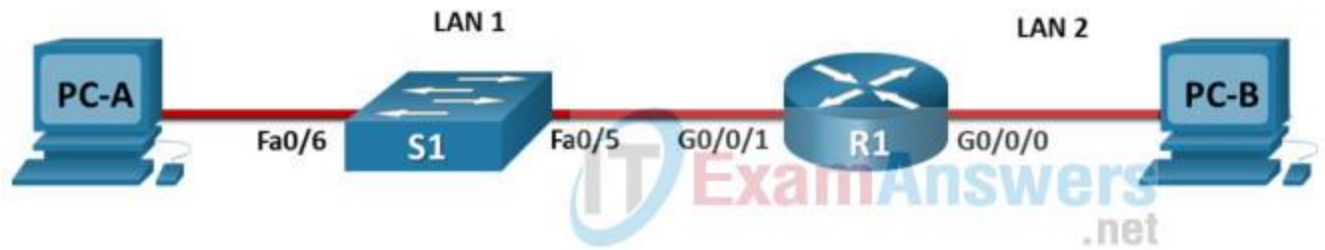
Placing Switch Switch-A and Router Router-A to wiring closet equipment rack.



Using **Copper Straight-Through** cable to connect **Host-A** (FastEthernet0 port) and **Switch-A** (FastEthernet0/6 port)



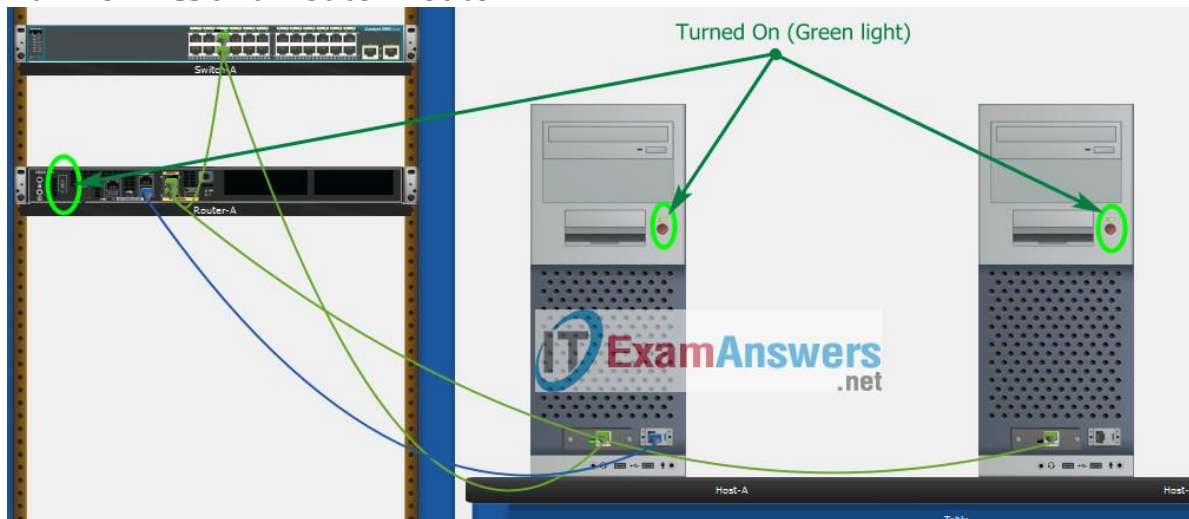
Same as above, using **Copper Straight-Through** cable to connect all devices as shown in the topology diagram.



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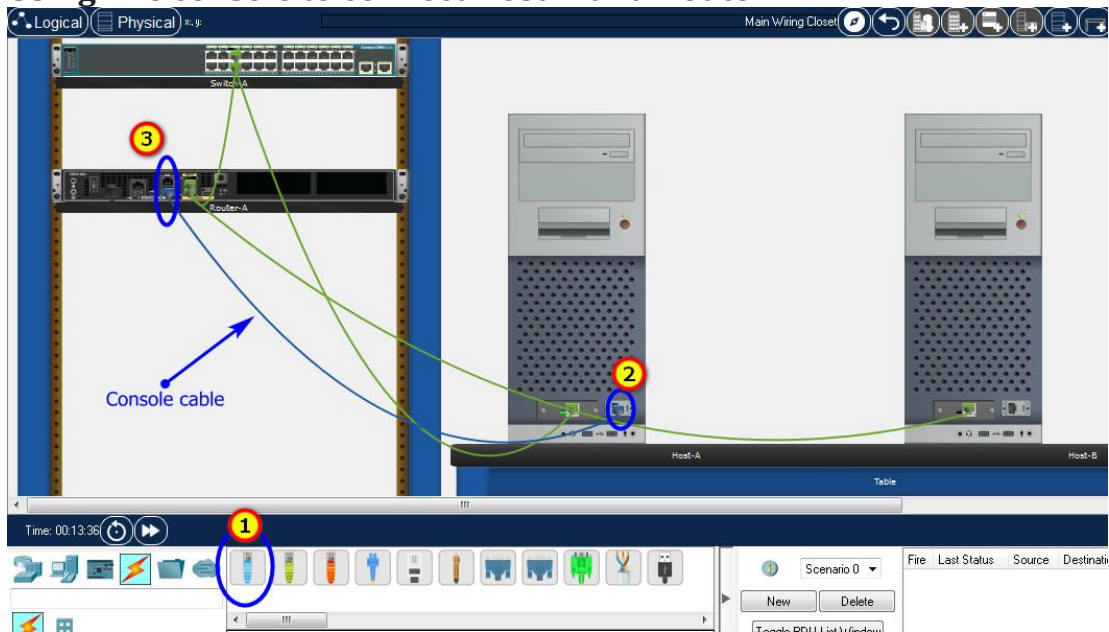
Turn-on PCs and Router Router-A



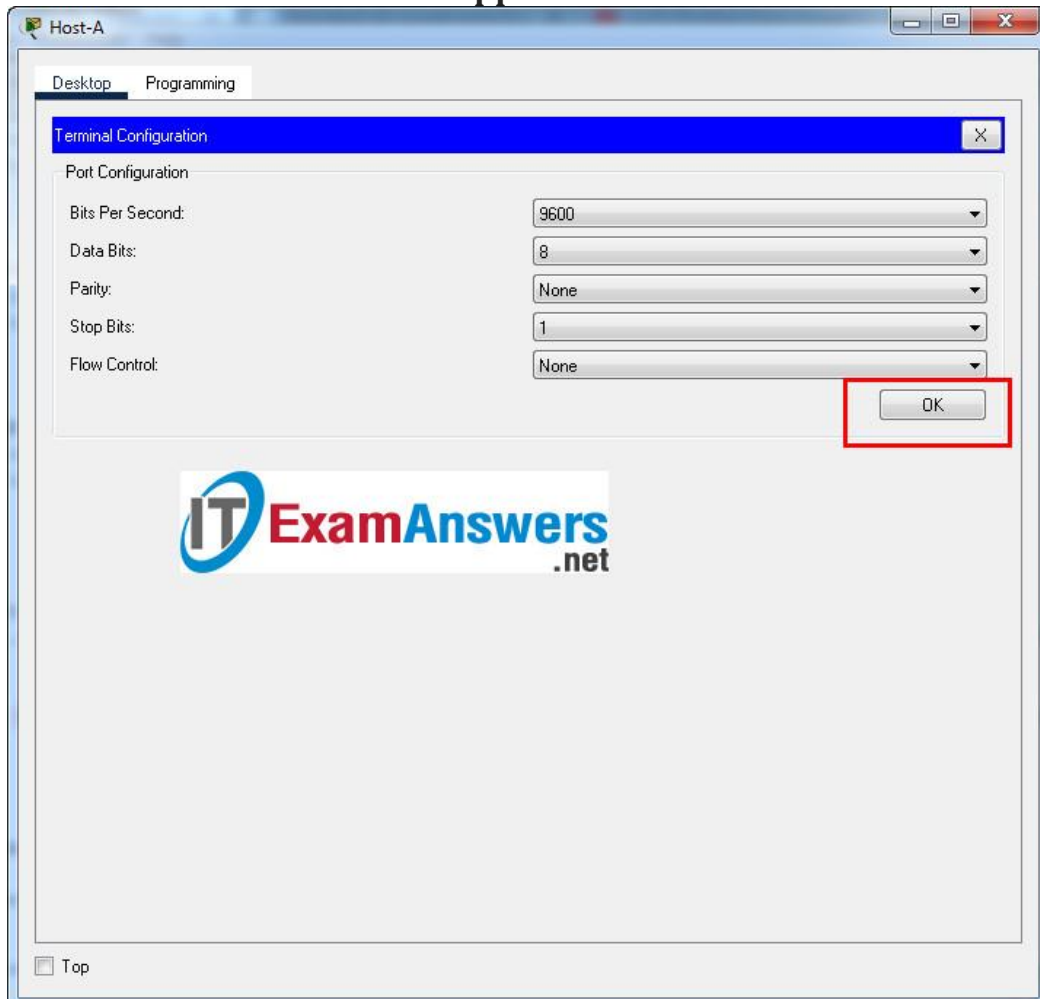
Part 2: Develop an IP Addressing Scheme

Item	Requirements	IPv4 Address
Network Address	192.168.10.0/24	
LAN 1 subnet host requirements	100	192.168.10.0/25 SM: 255.255.255.128
LAN 2 subnet host requirements	50	192.168.10.128/26 SM: 255.255.255.192
Router-A G0/0/1	First host address in LAN 1 subnet	192.168.10.1
Router-A G0/0/0	First host address in LAN 2 subnet	192.168.10.129
Switch-A SVI	Second host address in LAN 1 subnet	192.168.10.2
Host-A	Last host address in LAN 1 subnet	192.168.10.126
Host-B	Last host address in LAN 2 subnet	192.168.10.190

Using line console to connect Host-A and Router



Click to **Host-A** --> **Terminal** app --> click **OK**



Router Router-A configuration script

```
enable

configure terminal

no ip domain-lookup

hostname Router-A

banner motd #Unauthorized access to this device is
prohibited!#

interface g0/0/0

description Connect to Subnet B

ip address 192.168.10.129 255.255.255.192

no shutdown

exit

interface g0/0/1

description Connect to Subnet A

ip address 192.168.10.1 255.255.255.128

no shutdown

exit

enable secret ThisisaSecret
service password-encryption
security passwords min-length 10

ip domain-name netsec.com
username netadmin secret Ci$co12345
```

```
line console 0
password C@nsPassw!
login
exit

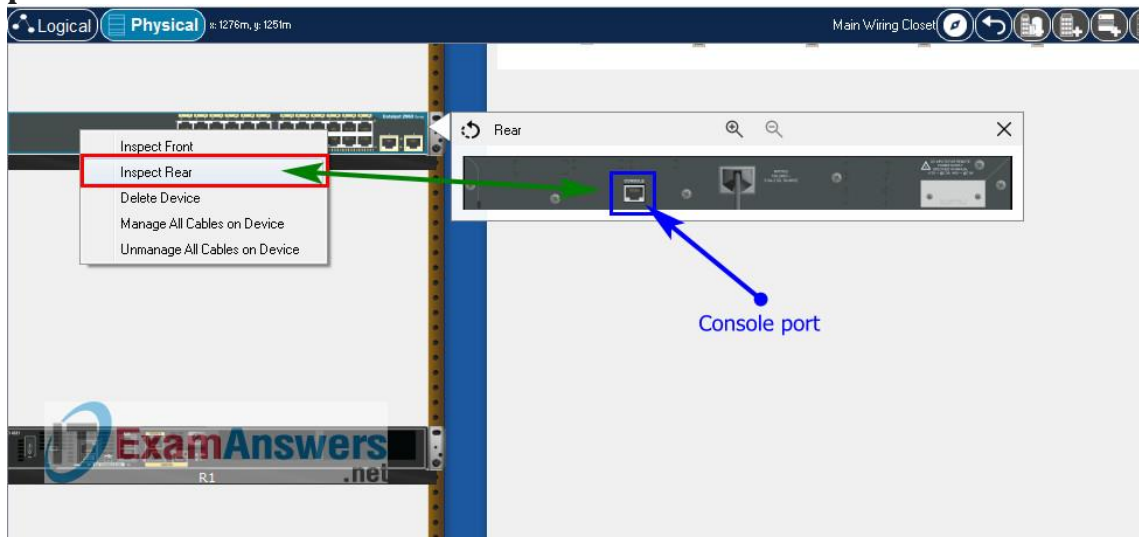
line vty 0 15
transport input ssh
login local
exit

crypto key generate rsa
1024
exit
copy running-config startup-config
```

Configuration for Switch Switch-A

Then, using Console cable to connect Host-B and Switch

To show Console port on Switch, Right click Switch --> Inspect Rear --> Console port



Switch Switch-A configuration script

```
enable

configure terminal

no ip domain-lookup

hostname Switch-A
```

```
banner motd #Unauthorized access to this device is  
prohibited!#
```

```
interface vlan 1  
description Switch Subnet A  
ip address 192.168.10.2 255.255.255.128  
no shutdown  
exit
```

```
ip default-gateway 192.168.10.1
```

```
enable secret ThisisaSecret  
service password-encryption
```

```
ip domain-name netsec.com  
username netadmin secret Ci$co12345
```

```
line console 0  
password C@nsPassw!  
login  
exit
```

```
line vty 0 15  
transport input ssh
```

```
login local
exit

crypto key generate rsa
1024

int range f0/1 - 4, f0/7 - 24, g0/1 - 2
description Unused switch ports
shutdown

end

copy running-config startup-config
```

Part 5: Configure the Hosts and Verify Connectivity

On PCs, go to **Desktop** tab --> **IP Configuration** menu

PC-A Network Configuration	
IPv4 Address	192.168.10.126
Subnet Mask	255.255.255.128
IPv4 Default Gateway	192.168.10.1

PC-A

Desktop Programming

IP Configuration

Interface: FastEthernet0

IP Configuration

☐ DHCP ☒ Static

IPv4 Address: 192.168.10.126

Subnet Mask: 255.255.255.128

Default Gateway: 192.168.10.1

DNS Server: 0.0.0.0

IPv6 Configuration

☐ Automatic ☒ Static

IPv6 Address: /

Link Local Address: FE80::202:17FF:FE19:59A7

Default Gateway:

DNS Server:

802.1X

☐ Use 802.1X Security

Authentication: MD5

Username:

Password:

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PC-B Network Configuration	
IPv4 Address	192.168.10.190
Subnet Mask	255.255.255.192
IPv4 Default Gateway	192.168.10.129

PC-B

Desktop Programming

IP Configuration

Interface: FastEthernet0

IP Configuration

☐ DHCP ☒ Static

IPv4 Address: 192.168.10.190

Subnet Mask: 255.255.255.192

Default Gateway: 192.168.10.129

DNS Server: 0.0.0.0

IPv6 Configuration

☐ Automatic ☒ Static

IPv6 Address: /

Link Local Address: FE80::20C:CFFF:FE49:C2BD

Default Gateway:

DNS Server:

802.1X

☐ Use 802.1X Security

Authentication: MD5

Username:

Password:

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