Task in the Course: Optical Networks 2023-2024

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- **Overview**: The task involves data transfer between two computers using Ethernet cables connected to their respective switches, which are interconnected using optical fiber.
- **Implementation**:
    - **Hard Reset of Switches**: A. Hold the mode button on the switch until the yellow indicator lights are on. B. After a few seconds, only one green light will remain on, and the reset process will be completed.
    - **Configuration**: A. Initially, you need to find your computer's COM Connection steps:
        - Open Device Manager:
            - Press Windows + X.
            - Select Device Manager.
        - Locate Ports (COM & LPT):
            - In the Device Manager window, expand the category Ports (COM & LPT).
        - Find the COM Port:
            - Check for available COM ports, listed as Communications Port (COMx). B. Install the Putty program:
        - Download from: https://putty.org/ C. Opening PuTTY:
        - Start the PuTTY program.
        - Select COM Connection: In the PuTTY window, select the Serial option.
        - Enter Connection Details: In the Serial line field, enter the COM port you want to use (e.g., COM3). In the Speed field, enter the speed (usually 9600).
        - Start Connection: Click Open to start the connection.

- D. Then, the computer terminal will open. We used the following commands for Configuration regarding PC1 on Switcher1:

```
enable
configure terminal
vlan 10
name office
exit
interface GigabitEthernet0/1
description Connected to PC1
switchport mode access
switchport access vlan 10
no shutdown
exit
interface GigabitEthernet0/24
description Trunk to Switch2
switchport mode trunk
switchport trunk allowed vlan 10
no shutdown
exit
write memory
show vlan brief
show interfaces trunk
```

Similarly, we used the following commands for Configuration regarding PC2 on Switcher2:

```
enable
configure terminal
vlan 10
name office
exit
interface GigabitEthernet0/1
description Connected to PC2
switchport mode access
switchport access vlan 10
no shutdown
exit
interface GigabitEthernet0/24
description Trunk to Switch1
switchport mode trunk
switchport trunk allowed vlan 10
no shutdown
exit
write memory
show vlan brief
show interfaces trunk
```

Note: Make sure both switchers are assigned different IP addresses and the same subnet mask during configuration!

Data Transfer Process: A. Connect PC1 via Ethernet cable to Switcher1 B. Connect PC2 via Ethernet cable to Switcher2 C. Connect Switcher1 and Switcher2 using optical fiber (serial), not ssh (remotely)

D. On PC1:

- Ethernet settings (Check that the ethernet cable is connected)
- Selection: Configure IP > Edit (manually) > Enable IPv4 address > Set an IPv4 > Set Subnet mask > Press save

E. On PC2:

- Ethernet settings (Check that the ethernet cable is connected)
- Selection: Configure IP > Edit (manually) > Enable IPv4 address > Set an IPv4 > Set Subnet mask > Press save

CAUTION: Ensure different IPv4 addresses and the same subnet masks for PC1, PC2, Switcher1, and Switcher2 respectively.

F. On PC1:

- Open the command line and use the ping command:

```
ping <IP Address Assigned of PC2>

Reply from <IP Address PC2>: bytes=x time=<y>ms TTL=z
```

G. On PC2:

- Open the command line and use the ping command:

```
ping <IP Address Assigned of PC1>

Reply from <IP Address PC1>: bytes=x time=<y>ms TTL=z
```