

2.11 LAB

While completing this lab, use the following information:

Location	Computer Name	IP Address
Networking Closet	CorpServer	192.168.0.10
Office 1	Office1	192.168.0.30
Office 2	Office2	192.168.0.31
IT Administration	ITAdmin	192.168.0.33
Executive Office	Exec	192.168.0.34

Complete this lab as follows:

1. From the Office1 computer, use the **ping** command to begin troubleshooting the connectivity problem.
 1. Under Office 1, select **Office1**.
 2. Right-click **Start** and then select **Terminal (Admin)**.
 3. From the PowerShell prompt, type **ping workstation** and then press **Enter**.
 4. Repeat step 1c for the remaining workstations.
 5. Notice that all the pings are successful except the ping to Office2 (192.168.0.31).
2. From the Office2 computer, use the **ping** command to further troubleshoot the connectivity problem.
 1. From the top left, select **Floor 1 Overview**.
 2. Under Office 2, select **Office2**.
 3. Right-click **Start** and then select **Terminal (Admin)**.
 4. From the PowerShell prompt, type **ping workstation** and then press **Enter**.
 5. Repeat step 2d for the remaining workstations.
Notice that all the pings fail except to itself (192.168.0.31).
3. From Office2, check for a connection to the internet.
 1. Right-click **Start**, and select **Settings**.
 2. Select **Network & Internet**.
Notice that the diagram on the Status pane shows no connection to a network.
 3. Close the Settings dialog.
4. Check for a network connection by viewing the NIC port of the Office2 computer.
 1. From the top left, select **Office 2** to view the hardware in this office.
 2. Above the Office2 workstation, select **Back** to see the back of the computer tower.
The link and status lights on the NIC port are not blinking, indicating no connection to the network. This can be due to:
 - A bad NIC
 - A faulty cable (easy to test)
 - An unplugged cable (easy to test)
 - A turned-off or faulty switch or hub port

3. Confirm that the network cable is connected to the NIC and the wall plate by selecting the cable plugged into the NIC.
Notice that both ends of the cable are connected correctly. This means that the Ethernet cable could be faulty.
5. Replace the network cable from Office2 and the wall.
 1. Select the **network cable** plugged into Office2 and drag it to the shelf.
 2. Drag the **RJ45** cable from the wall plug to the shelf.
 3. Under Shelf, select **Cat6a Cable, RJ45**.
 4. From the Selected Component pane:
 - Drag an **RJ45 Connector** to the network wall plug.
 - Drag the unconnected **RJ45 Connector** to the NIC on the back of the Office2 computer.
Notice that the link and status lights for the connection are not green and active. This means that the cable may not have been bad. It's time to check for issues in the Networking Closet.
6. From the Networking Closet, check the switch to ensure that it's powered on.
 1. From the top left, select **Floor 1 Overview**.
 2. Under Networking Closet, select **Hardware**.
Notice that the system light for the switch indicates that it is powered on.
 3. Observe the **activity lights** for all ports on the switch.
Notice that there is no activity for Port 4. Possible causes include:
 - The cable between Office 2's patch panel port and the switch is bad or disconnected.
 - Port 4 on the switch is disabled or shut down.
7. Verify that the network cable is connected to Office2's patch panel port and the switch.
 1. Select **Port 4** on the switch.
Notice that it shows the cable is also plugged into the patch panel. This may mean that this cable is faulty.
8. Replace the patch panel cable for Office2 to the switch.
 1. Select the cable plugged into **Port 4** and drag it to the workspace.
 2. From the patch panel, drag the **cable** plugged into **Off 2** to the workspace.
 3. Under Shelf, select **Cat6a Cable, RJ45**.
 4. From the Selected Component pane:
 - Drag an **RJ45 Connector** to Port 4 on the switch.
 - Drag the unconnected **RJ45 Connector** to the patch panel port for Off 2 (Office 2).
Notice that the link and status lights for Port 4 are now green and active.
9. From Office 2, check for a network connection.
 1. From the top left, select **Floor 1 Overview**.
 2. Under Office 2, select **Hardware**.
 3. Check for an active link light on the network card of the computer.
The light is blinking, indicating a network connection.
 4. On the Office2 monitor, select **Click to view Windows 11**.
 5. Right-click **Start** and select **Settings**.
 6. Select **Network & Internet**.
The diagram in Status page shows a connection to the network and internet.
 7. (Optional) Ping each *workstation* in the network.
Each ping attempt now succeeds.

10. From Office 1, use the **ping** command to verify connectivity to Office 2.
 1. From the top left, select **Floor 1 Overview**.
 2. Under Office 1, select **Office1**.
 3. From the PowerShell prompt, type **ping Office2** and then press **Enter**.
Notice that the ping to Office 2 succeeds. The problem is resolved.

Replacing the NIC in Office 2 and making a console connection to the switch to confirm if port 2 is disabled are two viable approaches to this problem. Yet, as indicated earlier, you should look for common errors or solutions that you can test quickly. Think about and check cables, power, and connectivity first when troubleshooting.