OPHS Cyber Patriot Warriors – 2024/2025

OPHS LAB 1 Context

The file to be used for this exercise is OPHS Lab 1.pkt.

It contains the network simulation that was discussed and demonstrated during practice on 9/13/24. The network simulation contains:

- Office Network:
    - Two laptops
    - One server
    - One network switch
    - One router
- Data Center Network:
    - Two servers
    - Two network switches
    - One router

This is representative of many company environments that have a basic office and data center connections. The user PCs (in this case laptops) need to received services from and connect to the various servers in the simulated network to get stuff done.

Some things to remember:

1. Start with the associated task and see what works and what doesn't
2. Remember how to use the basic network troubleshooting tools (ping, nslookup, traceroute ("tracert" command on the PC or "traceroute" command in the network devices …)
3. Remember the meaning of green, orange and red indicators for the connections
    a. Which ones are in which condition?
    b. If a links is shown in red or orange, what does that mean?
4. Remember how VLANs work and what they are used for
    a. Which network are the hosts on? Supposed to be on?
    b. Which network are the servers on? Supposed to be on?
5. Remember to check that all the devices are powered on
6. Remember how to identify what mode you are in when logged into a router or switch (normal, enabled, configuration ..)
7. Remember what the ? does
8. Remember what the up-arrow does when at the command prompt of a PC or in t network device
9. Remember how to do show commands do (show vlan; show interface <id>; show running-config (show run for short); show ip interface brief …); remember whether show commands are used in normal mode, enabled mode or configuration mode.
10. Remember the discussion around DNS (aka Internet dictionary) and how DNS works

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REQUIRED TASKS:
The network demonstrated in during practice was fully operational.

However, as discussed, things happen in real-world networks all the time. The uploaded file is altered to introduce some errors, consistent with the type of issues that will come during the real competitions. You need to find and fix them before completing the objectives.

Things you need to do after troubleshooting and fixing the issues:
1. From Laptop 0, open the web browser
   a. Establish a connection to the "web.local" server host
   b. Open the image
      i. Take a screenshot
   c. Open the OPHS Cyber Warriors page
      i. Open one of the images
      ii. Take a screenshot
2. From Laptop 1, open the command prompt:
   a. Connect using FTP to the "corp.local"
   b. Copy a file from the server to the laptop (pick any of the available files)
   c. Close the FTP session
   d. Show a directory listing on the laptop
   e. Take a screenshot
3. From either router, log into the router
   a. Perform a show command on the network interface that connects the routers
   b. Identify how many packets have crossed this link?
   c. Take a screenshot of the traffic information

Results:
- Put the four screenshots into a document file and save as a PDF
- Email the screenshots results to my email (get the address from the CAPT's emails on Cyber Patriot)
- The **first cadet** to correct all the network issues and then email the four screenshots requested above will win one of the Bluetooth microphones that I showed during practice.