Lab 06 – IPv4 Access Control Lists

For this lab, you will:

1. Using the Cisco Packet Tracer file provided to you this week, complete the following:

    - ✓ Add a Cisco 2960 Switch to the topology as DMZ-Switch
    - ✓ DMZ-Switch interface g0/2 should be connected to the Edge router on interface g0/2
    - ✓ Add a server to the topology as DMZ-HTTP-Server
    - ✓ DMZ-HTTP-Server should be connected to the DMZ-Switch on interface f0/20
    - ✓ Add a server to the topology as DMZ-EMAIL-Server
    - ✓ DMZ-EMAIL-Server should be connected to the DMZ-Switch on interface f0/21
    - ✓ Add a PC to the topology as PC3
    - ✓ PC3 should be connected to the Corporate Network Switch on interface f0/3
    - ✓ Add a PC to the topology as PC4
    - ✓ PC4 should be connected to the Corporate Network Switch on interface f0/4
    - ✓ DMZ-Switch has the Administrative IP Address of 172.31.74.10/24
    - ✓ DMZ-HTTP-Server has the IP Address of 172.31.74.200/24
    - ✓ DMZ-EMAIL-Server has the IP Address of 172.31.74.201/24
    - ✓ Edge router interface g0/2 has the IP Address of 172.31.74.1/24
    - ✓ PC3 has the IP Address of 192.168.47.103/24
    - ✓ PC4 has the IP Address of 192.168.47.104/24

    You should specify all of your IP Addresses and subnet masks (in bit notation) within individual text boxes on your topology diagram for each interface or device that has one assigned just like the ones already created for you within the topology. Make sure the interfaces are visible in your topology diagram as well – if the Cisco Packet Tracer bug still exists, place the interface in a note/text box on your topology next to the interface.

2. Using the network topology from above, ensure that you have full connectivity. Once you have verified all devices are able to communicate via ICMP, then proceed to the next step.

3. Configure an IPv4 Access Control List to accomplish the following:

    a) PC1 and PC2 should be able to access the Internet HTTP-Server via HTTP

    b) PC3 and PC4 should be able to access the Internet HTTPS-Server via HTTPS

    c) All Corporate PCs should be able to access the DMZ-HTTP-Server via HTTPS

    d) All Corporate PCs should be able to access the DMZ-EMAIL-Server via SMTP and POP3

e) All Corporate PCs should be able to “ping” the ISP interface connected to the Edge router

f) All other traffic should not be permitted

g) Save this .pkt file as “YOURNAME.YOURLASTNAME-IPv4ACLs.pkt”.

Make sure you save your packet tracer file frequently (and make a backup copy) so you do not lose your work in case the application crashes. It is always nice to revert back to a previous backup in case the file is corrupt.

4. Create a Microsoft Word Document and include the following information:

    a) **Description:** Brief Description of what topic or technology you are concentrating on within this lab. Keep this short and to the point.

    b) **Topology/Diagram:** Take the original topology you created within Cisco Packet Tracer and take a screenshot of the topology. Paste this into your Document. Please do not submit a screen capture of your entire screen or window. This should ONLY be of the topology. Make sure you include IP Addresses in your topology with the interfaces showing.

    c) **Syntax:** Table of Command Syntax and the associated description (ie: If you issued a cli command within the Cisco IOS or within the Windows CMD prompt, list it here and write a description as to what it does in your own words) – please make sure this is written in a nice, easy-to-read table format. (CLI Command on the left, description on the right, and (optionally) add another column for what mode of Cisco IOS you are in when issuing the CLI command.)

    d) **Test Cases:** Develop the necessary test cases to verify the ACL and all the ACEs are working as they should. Each test case should be written in a professional manner – not simple a quick sentence fragment.

    e) **Verification:** This is screenshot based. You will be asked to provide screenshots to verify that you have completed the assignment correctly. Please include the output and verification requested above and the following:

        a) Provide a screen capture testing initial connectivity.
        b) Provide a screen capture of the Edge Router's IPv4 routing table.
        c) Provide a screen capture of ACL you created (do not use a show running-config).
        d) Provide a screen capture of ALL the test cases: before and after.

    f) **Conclusion:** Wrap up your lab report with a short conclusion. If something did not work, state it. If everything did work successfully, state that as well.

    Please NOTE: Your submission should not include one screenshot per page. Please maximize the space on each page. The lab report should (most likely) be less than four or five pages – It could even be two to three pages in length depending upon the screenshots I ask you to submit for verification. Please make sure the screenshots are legible though!

5. Submit your lab report as a .pdf file and your .pkt to the appropriate assignment within iLearn.

    (Please do not zip these files nor should you submit multiple .pngs, .gifs, .jpgs, etc…)

Good Luck with your lab!