**Practice Skills Based Assessment (SBA)**

|  |  |  |
| --- | --- | --- |
| **Name** | **Lab Section** | **Comments** |
|  |  |  |

**Rules**

1. **Marks**: 0 marks
2. **Time Limit:** 45 minutes. Then we need to give the next student a chance.
3. During the actual SBA you are not allowed to access any information on your PC
4. During the actual SBA you are not allowed to use the Internet
5. You may consult your hand written notes (a single sheet, all hand-written)
6. Disable your wireless adapter
7. Disable your firewall

**Summary**

1. Your instructor will give you a router and a scenario sheet.
2. Calculate the addresses required on the scenario sheet immediately. When you are done raise your hand and the instructor will give you the answer sheet and take away your worksheet for marking.
3. Complete the configuration tasks listed on the next page
4. Answer the questions and complete the other tasks listed.
5. Upload your completed work as directed by your instructor.

**Background**

We will use the Eagle Network as the starting topology and you need to modify it by adding a ***Student Network*** portion.

You will be required to correctly cable, configure all devices in the **Student Network** so that they work properly, and test your settings. This includes connectivity by IP address and/or DNS name.

The Practice SBA topology and individual tasks are listed on the next 2 pages

|  |
| --- |
| **NAME:** |

**1. Cabling:**

|  |  |
| --- | --- |
| Complete all required network cabling (connect all devices in the “Student Network” shown on page 3). |  |

**2. Router Configuration:** Complete the configuration of all items listed below

|  |  |
| --- | --- |
| * Configure a Static Internet IP using the information provided * Router Name (use your college username as the router’s name EX:SMIT0987) * Set the Router’s IP to the first usable address in your network, set the correct mask * Enable DHCP and set the maximum users to 10 * Turn off NAT * Setup wireless according to the information you were given, you will not be connecting to the wireless network you are just configuring it. * Secure the router, set the password to *password*. Enable HTTPS access, leave HTTP Access enabled * Setup a static route to the Instructor network, set the name of this route to *“Instructor\_Network”* (information provided on Topology Diagram, Addressing and Settings sheet) | 5  1  2  1  1  5  1  4  /20 |

**3. PC Configuration:**

|  |  |
| --- | --- |
| * Configure you PC with the last usable address in your network. Your PC must be able to reach the Eagle-Server by name (http://eagle-server.example.com) * Start the Web Server on your PC set its port to 1080. | / 5 |

**Now test everything to make sure it all works!**

These items are checked automatically based on your configuration settings.

**5. DOS Command-line and web browser on PC**

|  |  |
| --- | --- |
| * Ping from PC --> 172.16.255.254 ( FA0/1)  Ping from PC --> 192.168.254.254  Ping from PC --> eagle-server.example.com * Trace route from PC --> 10.100.200.2 * Open the web page at <http://10.100.200.2:80> * Ask the instructor to test that they can reach your web server you need to provide the correct IP |  |

**Answer the following questions (1 mark each for items 1,2,3,4 and 5)**

1. What device has the IP address 172.31.254.254? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. What command would you use to show your PC’s network current configuration \_\_\_\_\_\_\_\_\_\_\_\_\_
3. What IP address should someone use to access your web server?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Do the following**

1. Run a Wireshark capture, open a web page (you have three servers to choose from). Filter your capture to show relevant traffic. Locate the packet containing HTTP GET request of the page download. Using the “Snipping Tool” take a screen capture of the packet, highlight the port number used by (on) your PC to make the request, we don’t want the server’s port. Save the screen capture as *“wireshark.jpg”*
2. Run the command that shows the IP address and associated MAC addresses that your computer has learned. Using the “Snipping Tool” take a screen capture of the output of this command. Highlight the MAC address for your PC’s default gateway. Save the screen capture as “*command.jpg”*
3. Backup your routers configuration.
4. Open the web page <HTTP://172.16.100.2/upload.html>. Fill in the required information and upload the three files requested.

**NAME: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Addressing**

Look for the number on top of your router. This what you will use in place of **XX** everywhere in the table below. As an example, if your **Router’s #** “is **26**“, the IP address for your router's Internet IP is 172.16.100.1XX/16. or 172.16.100.126/16 (Note: This is supposed to be easy! Do it *now*!)

Use your routers number to complete the table below

The value for your subnet (subnet ID) is: 192.168.113.64/26

**IP Addressing**: Determine the required IP addresses. DO NOT spend more than 5 minutes on this task.

When you are done, ask your lab Professor for the next page.

|  |  |  |  |
| --- | --- | --- | --- |
|  | **IP Address** | **Subnet Mask – decimal form** | **MARKS** |
| Router’s IP Address (**1st useable address**) |  |  | / 2 |
| PC IP Address (**last useable address**) |  |  | / 1 |
| Router’s Internet IP |  |  | / 1 |

When you are done, ask your lab Professor for the next page.

**NAME: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Topology Diagram, Addressing and Settings Information**

**Addresses:**

**Instructor’s Network**

**Route Name:** Instructor\_Network

**Network ID and mask:** 10.100.200.0 mask 255.255.255.0

**Gateway:** 172.16.100.2

|  |  |  |  |
| --- | --- | --- | --- |
| **Device** | **IP Address** | **Subnet Mask – decimal form** | **Marks** |
| Router’s IP Address (**1st useable address**) | 192.168.113.65 | 255.255.255.192 | / 2 |
| PC IP Address (**last useable address**) | 192.168.113.126 | 255.255.255.192 | / 1 |
| Router’s Internet IP | 172.16.100.113 | 255.255.0.0 | / 1 |
| Router’s Default Gateway | 172.16.255.254 | N/A | N/A |
| DNS Server address | 192.168.254.254 | N/A | N/A |

Wireless Router, Added 04/20/2004

172.16.100.2

Instructor Router

Instructor Server



192.168.\_\_\_\_\_.\_\_\_\_/\_\_\_\_

Router IP 192.168.\_\_\_\_.\_\_\_\_/\_\_\_

Internet IP: 172.16.100.\_\_\_\_ /16

Student PC



Student-Router

S1 Central

Student Network

R2 Central

R1 ISP

172.16.255.254

10.10.10.6

Eagle / DNS server

192.168.254.254

eagle-server.example.com



**Wifi Settings:**

Band: 2.4GHz

Network Mode: Wireless-B Only

SSID:PracticeSBA\_

Channel:

Channel Width: 20 MHz Only

Security Mode: WPA2 Personal

Passphrase: PRACTICE

10.100.200.2