Networks lab04

Monday, May 22, 2023 4:38 AM

Original networkID:
192.168.4.0/24

Sunny Subnetting Table

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Subnet | 1 | 2 | 4 | 8 | 16 | 32 | 64 | 128 | 256 |
| Host | 256 | 128 | 64 | 32 | 16 | 8 | 4 | 2 | 1 |
| Subnet Mask | /24 | /25 | /26 | /27 | /28 | /29 | /30 | /31 | /32 |

| Network ID | Subnet Mask | Host ID Range | # of Usable Host | Broadcast ID |
|---|---|---|---|---|
| 192.168.4.0 | /26 | 192.168.4.1-192.168.4.62 | 62 | 192.168.4.63 |
| 192.168.4.64 | /26 | 192.168.4.65-192.168.4.126 | 62 | 192.168.4.127 |
| 192.168.4.128 | /26 | 192.168.4.129-192.168.4.190 | 62 | 192.168.4.191 |
| 192.168.4.192 | /26 | 192.168.4.193-192.168.4.254 | 62 | 192.168.4.255 |

The fourth host ID range is between 192 and 255, which is 193 to 254.

# Lab Assignment 04

Due May 24, 2023 11:59 PM • Closes May 24, 2023 11:59 PM

**Instructions**

Assignment:

In this assignment, you will simulate a DHCP server that assigns IP addresses to computers in a subnet using Packet Tracer. You need to submit a detailed lab report to describe what you have done and what you have observed, including screenshots. Late submissions will not be accepted.

Requirements:

1. Create a network topology with two subnets, A and B. Subnet A contains at least four computers and subnet B contains a DHCP server. Each subnet has its own router and subnets A and B are connected via this two routers.
2. Configure the IP addresses of all devices in the network.
3. Configure the DHCP server to assign IP addresses to computers in subnet A with the following specifications:
   a. IP range: 192.168.4.20 to 192.168.4.254
   b. Subnet mask: 255.255.255.0
   c. Default gateway: IP address of the router.
4. Configure each computer in subnet A to obtain its IP address automatically using DHCP.
5. Verify that each computer has been assigned a unique IP address within the specified IP range.
6. Test the connectivity between the computers in subnet A and subnet B.

Deliverables:

Acceptable formats for Reports: Microsoft Word or PDF document or similar methods.

You also need to submit your packet tracer work in .pkt file. If you can not save your work, please be sure to log in on packet tracer (mentioned in previous lecture videos)

File naming format should be "CSE208_Lab04_yourstudentnumber"

Policy:

All work on assignments must be done with your own unless stated otherwise. You are encouraged to discuss with your classmates about the given assignments, but these discussions should be carried out in an abstract way. That is, discussions related to a particular solution to a specific problem (either in actual code or in the pseudocode) will not be tolerated. In short, turning in someone elses work(from internet), in whole or in part, as your own will be considered as a violation of academic integrity. Please note that the former condition also holds for the material found on the web as everything on the web has been written by someone else.

Subnet A:
- 4 computers
- IP range (192.168.4.20-254)
- Subnet mask (255.255.255.0)
- Default gateway (IP address of the router)

Subnet B:
- DHCP server

Connected via 2 routers.

# Networks lab05

Wednesday, May 24, 2023 9:12 PM

## Lab Assignment 05

Due May 30, 2023 11:59 PM • Closes May 30, 2023 11:59 PM

**Instructions**

Assignment:

In this assignment, you will simulate a network scenario using Dynamic NAT (Network Address Translation) in Packet Tracer. You need to submit a detailed lab report to describe what you have done and what you have observed, including screenshots. Late submissions will not be accepted.

Requirements:

1. Create a network topology with a local subnet and a router connected to an another subnet that consist of a server (of any type HTTP, FTP, etc.) and a router. (You may use NAT for the second subnet as well.)
2. The local subnet should have a minimum of four computers.
3. Assign private IP addresses to the computers in the local subnet using the following range: 192.168.1.0/24.
4. Configure the router to perform Dynamic NAT with the following specifications:
    a. Configure two global IP addresses provided to you as public IP addresses (e.g., 203.0.113.1 and 203.0.113.2).
    b. Map the private IP addresses of the computers to the global IP addresses using the NAT configuration on the router.
5. Verify that the computers in the local subnet can access the server pc using the two assigned global IP addresses.
6. Test connectivity between the computers in the local subnet and perform a ping test to the server pc to confirm internet connectivity.

Deliverables:

Acceptable formats for Reports: Microsoft Word or PDF document or similar methods.

You also need to submit your packet tracer work in .pkt file. If you can not save your work, please be sure to log in on packet tracer (mentioned in previous lecture videos)

File naming format should be "CSE208_Lab05_yourstudentnumber"

Policy:

All work on assignments must be done with your own unless stated otherwise. You are encouraged to discuss with your classmates about the given assignments, but these discussions should be carried out in an abstract way. That is, discussions related to a particular solution to a specific problem (either in actual code or in the pseudocode) will not be tolerated. In short, turning in someone elses work(from internet), in whole or in part, as your own will be considered as a violation of academic integrity. Please note that the former condition also holds for the material found on the web as everything on the web has been written by someone else.