Faculty of Computing

[Computer Communications & Network]

Lab No 5 Tasks

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https://angsila.cs.buu.ac.th/~pusit/cisco/ch10/lab1/index.html

Task 1: Use the IP address chart and your knowledge of IP address classes to answer the following questions:

1. **What is the decimal and binary range of the first octet of all possible Class B IP addresses?**

- Decimal: From: **128** To: **191**
- Binary: From: **10000000** To: **10111111**

2. **Which octet(s) represent the network portion of a Class C IP address? First 3 Octets**
3. **Which octet(s) represent the host portion of a Class A IP address? Except One the Remaining Octets are Host**
4. **What is the maximum number of useable hosts with a Class C network address?**

   2^[No of bits of host] -2 : 2^8-2=256
5. **How many Class B networks are there? 2 Network Portion**
6. **How many hosts can each Class B network have? 2^16-2=65534**
7. **How many octets are there in an IP address? 4 How many bits per octet? 8**

Task 2: Determine the host and network portions of the IP address

With the following IP host addresses, indicate the following:

- Class of each address
- Network address or ID
- Host portion
- Default subnet mask

The host portion will be all zeros for the network ID. Enter just the octets that make up the host. The host portion will be all ones for a broadcast. The network portion of the address will be all ones for the subnet mask. Fill in the following table:

Host IP Address	**Address Class**	**Network Address**	**Host Address**	**Default Subnet Mask**
216.14.55.137	C	216.14.55	137	255.255.255.0
123.1.1.15	A	123	1.1.15	255.0.0.0

150.127.221.244	B	150.127	221.244	255.255.0.0
194.125.35.199	C	194.125.35	199	255.255.255.0
175.12.239.244	B	175.12	239.244	255.255.0.0

Task 3: Given an IP address of 142.226.0.15, answer the following questions:

What is the binary equivalent of the second octet? **11100010**

What is the class ofthe address? **B**

What is the network address of this IPaddress? **142.226**

Is this a valid IP host address (Y/N)? Why or why not?

This is a vaild IP address because the binary of host numbers are combination of Ones and Zeros. If there is completey zeros or ones than it is not a vaild IP address.

Task 4: Determine which IP host addresses are valid for commercial networks

IP Host Address	Valid Address? (Yes/No)	Why or Why Not
150.100.255.255	B (No)	Only combination of Ones
175.100.255.18	B (Yes)	Combination of both
195.234.253.0	C (No)	Only combination of Ones
100.0.0.23	A (Yes)	Combination of both
188.258.221.176	B (No)	Range across above 255
127.34.25.189	B (Yes)	Combination of both
224.156.217.73	D **(No)**	Only combination of Ones