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**](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

1. **Which octet(s) represent the network portion of a Class C IP address? 1,2,3**
2. **Which octet(s) represent the host portion of a Class A IP address? 2,3,4**
3. **What is the maximum number of useable hosts with a Class C network address? 254**
4. **How many Class B networks are there? 2^16=65536**
5. **How many hosts can each Class B network have? 65534**
6. **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 | .221.224 | 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? Class B

What is the network address of this IP address? 142.226\_

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

No it’s not a valid IP the host has all 1’s.

The host address must not be comprised of all 0’s or 1’s.

**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 | No | All 1’s in binary |
| 175.100.255.18 | Yes | 1 octet has combinations |
| 195.234.253.0 | No | All bits 0 |
| 100.0.0.23 | Yes | Host bits has combinations |
| 188.258.221.176 | No | 2nd octect with exceeding range |
| 127.34.25.189 | Yes | Host bits has combinations |
| 224.156.217.73 | No | Not for commercial use it multicast |