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? First three octet**
2. **Which octet(s) represent the host portion of a Class A IP address? Last three octet**
3. **What is the maximum number of useable hosts with a Class C network address? 254**
4. **How many Class B networks are there? 16 bits(first two octet)**
5. **How many hosts can each Class B network have? 16 bits(last two network)**
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 | 216.14.55.0 | 137 | 255.255.255.0 |
| **123.1.1.15** | A | 123.0.0.0 | 1.1.15 | 255.0.0.0 |
| **150.127.221.244** | B | 150.127.0.0 | 221.244 | 255.255.0.0 |
| **194.125.35.199** | C | 194.125.35.0 | 199 | 255.255.255.0 |
| **175.12.239.244** | B | 175.12.0.0 | 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 IPaddress? \_FIRST TWO OCTET(142.226.0.0)

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

THIS IP ADDRESS IS VALID BECAUSE ALL THE BITS IN LAST OCTET IS NOT 0 OR NOT 1 \_\_

**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 BITS ARE 1 |
| 175.100.255.18 | YES | 2 LAST OCTET ARE 1 BUT LAST ARE MIX |
| 195.234.253.0 | NO | ALL ARE 0 |
| 100.0.0.23 | YES | SECOND AND THIRD ARE 0 BUT LAST IS MIX |
| 188.258.221.176 | NO | OUT OF RANGE |
| 127.34.25.189 | YES | MIX |
| 224.156.217.73 | NO | NO NETWORK OR HOST ADDRESS |