ECEC-357/ECEC-531

Homework #2

IP Addressing

- **Classful Addressing)** Assume that you have been assigned the classful 132.45.0.0/16 network block. You need to establish eight subnets.

  1. how many bits are required to define 8 subnets?
  2. Specify the extended-network-prefix that allows for 8 subnets.
  3. List the subnets in binary format and dotted decimal notation.
     #0
     #1
     #2
     #3
     #4
     #5
     #6
     #7
  4. List the range of host addresses that can be assigned to Subnet #3
  5. What is the broadcast address for Subnet #3

- **VLSM** An organization has been assigned the network number 140.25.0.0/16 and it plans to deploy VLSM. The figure below provides a graphic display of the VLSM design for the organization.

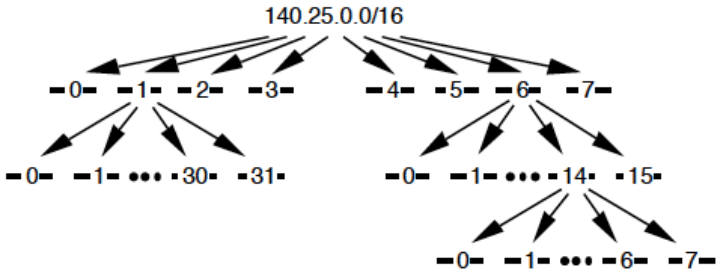

Figure 1: Address Strategy for VLSM Example

  1. Specify the eight subnets of 140.25.0.0/16:
  2. List the host addresses that can be assigned to Subnet #3
  3. Identify the broadcast address for Subnet #3
  4. Specify the 16 subnets of Subnet #6
     #6-0
     #6-1

#6-2
#6-3
#6-4
#6-5
#6-6
#6-7
#6-8
#6-9
#6-10
#6-11
#6-12
#6-13
#6-14
#6-15

5. List the host addresses that can be assigned to Subnet #6-3
6. Identify the broadcast address for Subnet #6-3
7. Specify the eight subnets of Subnet #6-14

#6-14-0
#6-14-1
#6-14-2
#6-14-3
#6-14-4
#6-14-5
#6-14-6
#6-14-7

8. List the host addresses that can be assigned to Subnet #6-14-2 (140.25.220.128/26):
9. Identify the broadcast address for Subnet #6-14-2 (140.25.220.128/26):

- **CIDR**

1. List the individual networks numbers defined by the CIDR block 200.56.168.0/21.
2. Aggregate the following set of (4) IP /24 network addresses to the highest degree possible: 212.56.146.0/24; 212.56.147.0/24; 212.56.148.0/24; 212.56.149.0/24.
3. How would you express the entire Class A address space as a single CIDR advertisement?