ET0730 NWF
LAB 5 – Subnetting (VLSM Answers)

(B) Variable-length SubnetMask(VLSM)
4. Independent learning activity on VLSM

Read the lecture notes - Chapter 5, from slide 26.

PROCEDURES

4.1 Design VLSM subnetting

Given a block of IP addresses **200.15.11.0/24.**
Propose a VLSM subnetting scheme to meet the requirements listed in Table 5.4.
Fill in Table 5.5 with your design parameters.

Subnet Name	Requirement	Number of host bits required, *h*
LAN #1	Support 28 host addresses	5
LAN #2	Support 20 host addresses	5
LAN #3	Support 10 host addresses	4
WAN	Point-to-point connection between two routers	2

Table 5.4 – Requirements of 4 VLSM subnets

Subnet	Network ID	Host Address range	Broadcast Address	Subnet Mask
LAN #1	200.15.11.0/27	200.15.11.1 to 200.15.11.30	200.15.11.31	255.255.255.**224**
LAN #2	200.15.11.32/27	200.15.11.33 to 200.15.11.62	200.15.11.63	255.255.255.**224**
LAN #3	200.15.11.64/28	200.15.11.65 to 200.15.11.78	200.15.11.79	255.255.255.**240**
WAN	200.15.11.80/30	200.15.11.81 to 200.15.11.82	200.15.11.83	255.255.255.**252**

Table 5.5 – VLSM subnetting design parameters for subnets in Table 5.4

4.2 Construction and Configuration of a Computer Network for Testing VLSM subnetting

With the network shown in **Figure 5.1** and the design parameter in **Table 5.5,** complete **Table 5.6** and show it to your lecturer.

Device	IP Address	Subnet Mask	Default gateway
PC0	200.15.11.2	255.255.255.224	200.15.11.1
PC1	200.15.11.3	255.255.255.224	200.15.11.1
Router 0's Fe0/0	200.15.11.1	255.255.255.224	Not applicable
PC2	200.15.11.34	255.255.255.224	200.15.11.33
PC3	200.15.11.35	255.255.255.224	200.15.11.33
Router 0's Fe0/1	200.15.11.33	255.255.255.224	Not applicable
PC4	200.15.11.66	255.255.255.240	200.15.11.65
PC5	200.15.11.67	255.255.255.240	200.15.11.65
Router 1's Fe0/0	200.15.11.65	255.255.255.240	Not applicable
Router 0's S0/0/0	200.15.11.81	255.255.255.252	Not applicable
Router 1's S0/0/0	200.15.11.82	255.255.255.252	Not applicable

Table 5.6– IP address configuration of hosts and routers