Lab 6: Objective:

Part A: Use VLSM technique to configure given topology
Part B: Use VLSM technique & safe Addresses by using the correct prefix length.

Lab 6
Variable Length Subnet Mask (VLSM)

Part A: Use VLSM technique to configure given topology

Variable Length Subnet Mask (VLSM)

VLSM stands for Variable Length Subnet Mask where the subnet design uses more than one mask in the same network which means more than one mask is used for different subnets of a single class A, B, C or a network. It is used to increase the usability of subnets as they can be of variable size. It is also defined as the process of sub netting of a subnet.

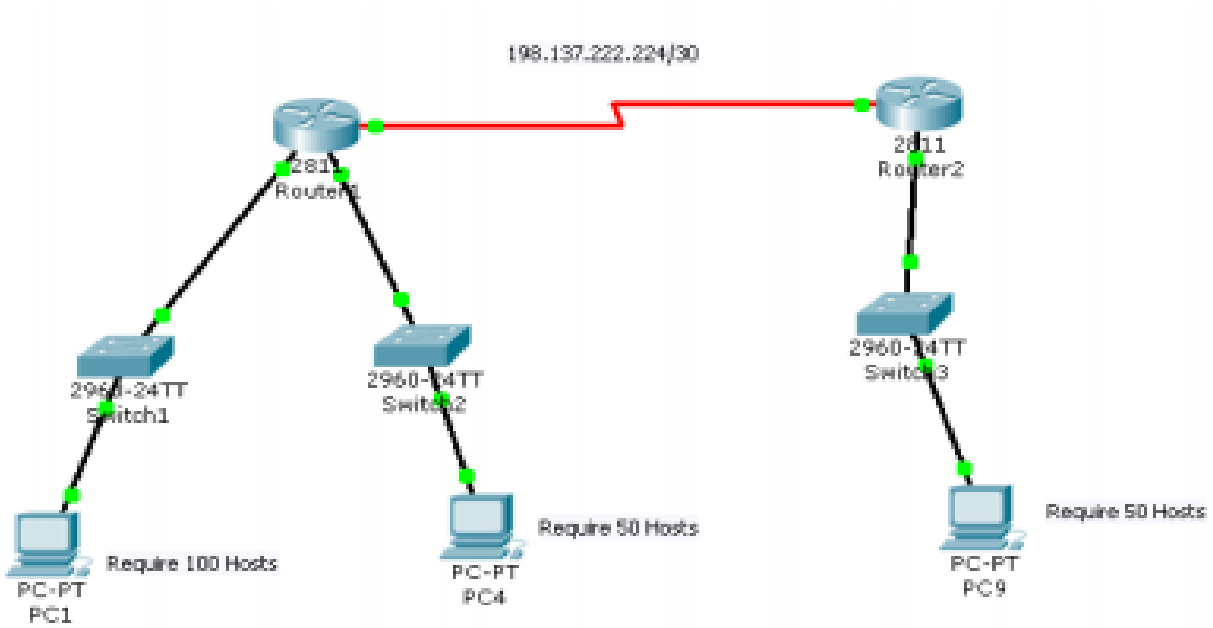

Figure 1: VLSM topology

Task1, IP Belongs to which Class

Use 198.137.222.0 & select a class in which the requirement satisfy

What class should be used to accomplish this topology?

Ans. _____

Task 2, Requirement

Router 1&2 (Se0/0/0): Require 2 useable hosts

Router 1(Fa0/0) Require 100 Useable Hosts

Router 1(Fa0/1) Require 50 usable Hosts

Router 2(Fa0/0) Require 50 usable Hosts

Task 3, Fill the table to satisfy the requirements

Device Name	Interface	IP Address (Range)	Subnet Mask	Default Gateway
Router-1	Se0/0/0			
Router-1	Fa0/0			
Router-1	Fa0/1			
Router-2	Se0/0/0			
Router-2	Fa0/0			

Part B: Use VLSM technique & safe Addresses by using the correct prefix length.

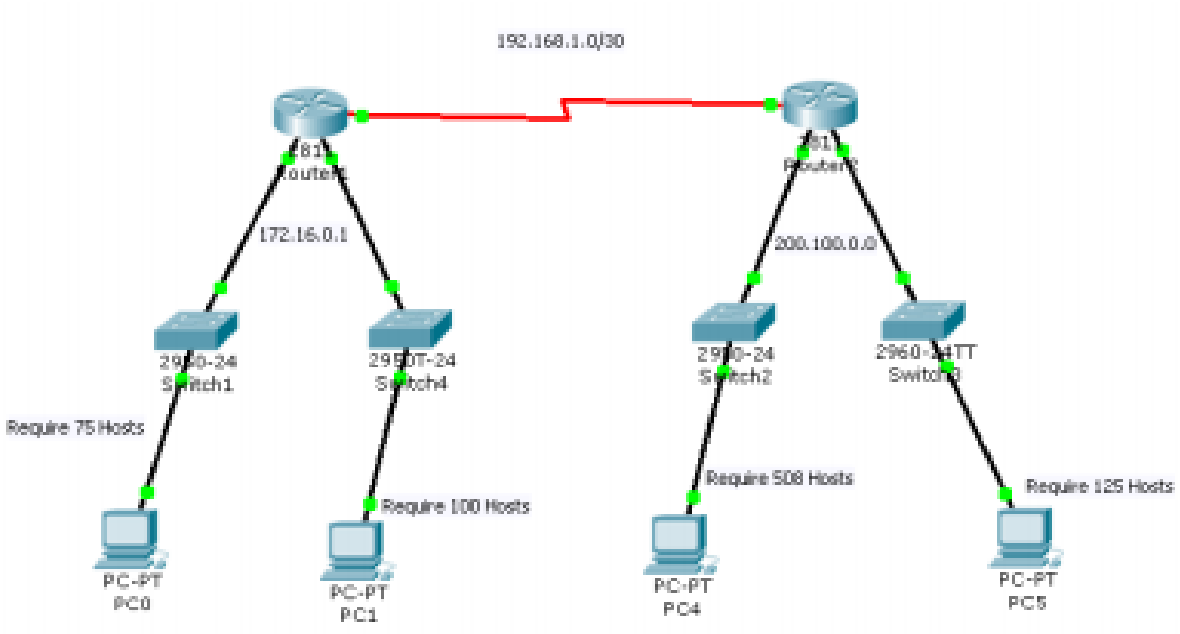

Figure 2: VLSM addressing

Requirement

Use the above IP Addresses & select a class in which the requirement satisfy
What class should be used for Router 1 Interfaces?

Ans. _____

What class should be used for Router 1 & 2 Serial Interfaces?

Ans. _____

What class should be used for Router 2 interfaces?

Ans._____

Router 1&2 (Se0/0/0): Require 2 useable hosts

Router 1(Fa0/0) Require 75 Useable Hosts

Router 1(Fa0/1) Require 100 usable Hosts

Router 2(Fa0/0) Require 508 usable Hosts

Router 2(Fa0/1) Require 125 usable hosts

Fill the table to satisfy the requirements

Device Name	Interface	IP Addresses (Range)	Subnet Mask	Default Gateway
Router-1	Se0/0/0			
Router-1	Fa0/0			
Router-1	Fa0/1			
Router-2	Se0/0/0			
Router-2	Fa0/0			
Router-2	Fa0/1			

Lab-6 Exercise:

Design a network which consists of 2 routers. Use VLSM technique & safe Addresses by using the correct prefix length. Each student will use different IP address.

Requirements are,

Use the IP Addresses & select a class in which the requirement satisfy
What class should be used for Router 1 Interfaces?

Ans. _____
What class should be used for Router 1 & 2 Serial Interfaces?

Ans. _____
What class should be used for Router 2 interfaces?

Ans._____

Router 1&2 (Se0/0/0) Require 2 hosts

Router 1(Fa0/0) Require 127 Hosts

Router 1(Fa0/1) Require 200 Hosts

Router 2(Fa0/0) Require 256 Hosts

Router 2(Fa0/1) Require 509 hosts

Fill the table to satisfy the requirements.