

NST21022 - Practical for Network Switching and Routing

Department of Information & Communication Technology

Faculty of Technology, SEUSL

Lab Sheet – 07

Title: IPv4 VLSM (Variable Length Subnet Mask)

Aim:

- VLSM IP addressing scheme
- Configure devices with IPv4 after subnetting

Task:

- Design an IP scheme
- Subnet the IPv4 address
- Assign IP address to Network devices and verify connectivity

Use “NST21022 Labsheet 07.pka” file

Activities

Exercise 01: Subnet the 192.168.1.0/24 network into the appropriate subnets.

1. Based on the topology, how many subnets were needed?
2. How many hosts need for each subnet?
3. How many hosts provide by each subnet?

Exercise 02: Fill the subnet table.

Subnet Number	Network Address	First Usable Host Address	Last Usable Host Address	Broadcast Address
1				
2				
3				
4				
5				
6				
7				
8				

Exercise 03: Configure IP address according to following criteria.

1. Fill the addressing table using following guidelines:
 - a. Assign the first usable IP addresses in each subnet to R1 for the two LAN link and WAN link
 - b. Assign the first usable IP addresses of the subnet to R2 for the LAN links, assign the last usable IP address for the WAN link
 - c. Assign the second usable IP address in the attached subnets to the switches
 - d. Assign the third usable IP address to the PCs in each subnet

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Addressing Table

Devices	Interfaces	IP Addresses	Subnet Mask	Default Gateway
R1	G0/0/0			
	G0/0/1			
	S0/1/0			
R2	G0/0/0			
	S0/1/0			
S1	VLAN1			
S2	VLAN1			
S3	VLAN1			
PC-1	NIC			
PC-2	NIC			
PC-3	NIC			

2. Assign IP addresses to network devices and verify connectivity