The University of Jordan, Comp. Eng. Dept.
Spring 2023: Networks lab: Experiment 2
IP Addressing: Version 4
(Prelab Report)

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In this repot you are required to fill the addressing tables for problems 1 and 2.

Problem 1:

- You have been given the **182.16.0.0/19** address space to use in your network design. The plan should have equal-sized subnets.

Table 1. Addressing table for the subnetting problem_1

Subnet #	Network Address	Prefix length	Subnet mask	First assignable address	Last assignable address	Broadcast Address
Subnet 0	182.16.0.0					
Subnet 1	182.16.2.0	23	255.255.254.0	182.16.2.1	182.16.3.254	182.16.3.255
Subnet 2	182.16.4.0	23	255.255.254.0	182.16.4.1	182.16.5.254	182.16.5.255
Subnet 3	182.16.6.0	23	255.255.254.0	182.16.6.1	182.16.7.254	182.16.7.255
Subnet 4	182.16.8.0	23	255.255.254.0	182.16.8.1	182.16.9.254	182.16.9.255
Subnet 5	182.16.10.0	23	255.255.254.0	182.16.10.1	182.16.11.254	182.16.11.255
Subnet 6	182.16.12.0	23	255.255.254.0	182.16.12.1	182.16.13.254	182.16.13.255
Subnet 7	182.16.14.0	23	255.255.254.0	182.16.14.1	182.16.15.254	182.16.15.255
Subnet 8	182.16.16.0	23	255.255.254.0	182.16.16.1	182.16.17.254	182.16.17.255
Subnet 9	182.16.18.0	23	255.255.254.0	182.16.18.1	182.16.19.254	182.16.19.255

Problem 2:

- You have been given the **200.87.0.0/21** address space to use in your network design. Perform CIDR to minimize the number of routing entries that each router will advertise. Consider that

the default gateway IP addresses of the hosts (i.e., the routers' LAN interfaces) are excluded from the hosts' number.

Fill the table with the correct addresses:

Table 2. Addressing table for the CIDR problem_2

Subnet #	Addresses Required	Number of required bits for hosts	2^(Number of required bits for hosts)	CIDR notation	Subnet mask	Network ID	Broadcast ID	First assignable address	Last assignable address
Subnet 0		**9**	**512**	**23**	**255.255.254.0**	**200.87.0.0**	**200.87.1.255**	**200.87.0.1**	**200.87.1.254**
Subnet 1		**8**	**256**	**24**	**255.255.255.0**	**200.87.2.0**	**200.87.2.255**	**200.87.2.1**	**200.87.2.254**
Subnet 2		**7**	**182**	**25**	**255.255.255.128**	**200.87.3.0**	**200.87.3.127**	**200.87.3.1**	**200.87.3.126**
Subnet 3		**7**	**182**	**25**	**255.255.255.128**	**200.87.3.128**	**200.87.3.255**	**200.87.3.129**	**200.87.3.254**
Subnet 4		**6**	**64**	**26**	**255.255.255.192**	**200.87.4.0**	**200.87.4.63**	**200.87.4.1**	**200.87.4.62**
Subnet 5		**6**	**64**	**26**	**255.255.255.192**	**200.87.4.64**	**200.87.4.127**	**200.87.4.65**	**200.87.4.126**
Subnet 6		**5**	**32**	**27**	**255.255.255.224**	**200.87.4.128**	**200.87.4.159**	**200.87.4.129**	**200.87.4.158**
Subnet 7		**2**	**4**	**30**	**255.255.255.252**	**200.87.4.160**	**200.87.4.163**	**200.87.4.161**	**200.87.4.162**
Subnet 8		**2**	**4**	**30**	**255.255.255.252**	**200.87.4.164**	**200.87.4.167**	**200.87.4.165**	**200.87.4.166**
Sub net 9		**2**	**4**	**30**	**255.255.255.252**	**200.87.4.168**	**200.87.4.171**	**200.87.4.169**	**200.87.4.170**