

CSE 5004

COMPUTER NETWORKS



VLSM Assignment

L1+L2 | SJT418
WINTER SEMESTER 2020-21

by

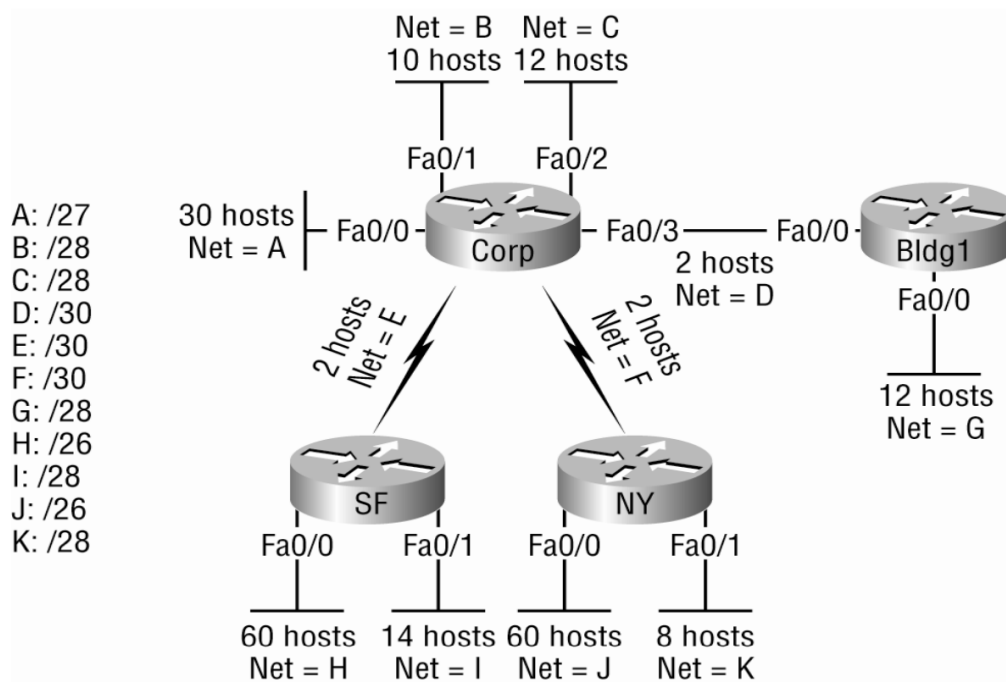
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Question 1

Make a table using this VLSM Network and upload the table itself. Write the table values for all the Nets. Assign IP addresses for all the Nets.

[Before writing the IP addresses, you should know about Host address, Mask address. (how to extract them) etc. [Learn about](#) how to configure VLSM, how to configure Subnetting & Supernetting]



Solution

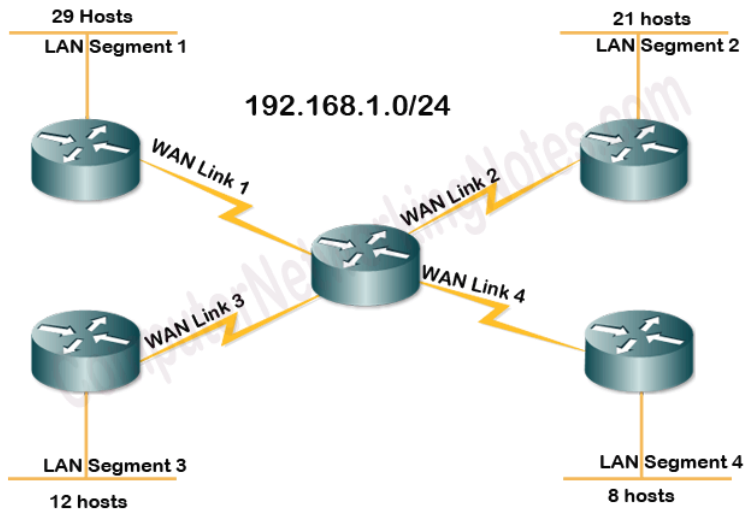
The given figure shows a network with 11 networks; two block sizes of 64, one of 32, five of 16, and three of 4.

Nets	IP	Subnet	Mask	Subnets	Hosts	Block
A	192.16.10.32	/27	255.255.255.224	8	30	$2^5 = 32$
B	192.16.10.0	/28	255.255.255.240	16	10	$2^4 = 16$
C	192.16.10.16	/28	255.255.255.240	16	12	$2^4 = 16$
D	192.16.10.244	/30	255.255.255.252	64	2	$2^2 = 4$
E	192.16.10.248	/30	255.255.255.252	64	2	$2^2 = 4$
F	192.16.10.252	/30	255.255.255.252	64	2	$2^2 = 4$
G	192.16.10.208	/28	255.255.255.240	16	12	$2^4 = 16$
H	192.16.10.64	/26	255.255.255.192	4	60	$2^6 = 64$
I	192.16.10.192	/28	255.255.255.240	16	14	$2^4 = 16$
J	192.16.10.128	/26	255.255.255.192	4	60	$2^6 = 64$
K	192.16.10.224	/28	255.255.255.240	32	8	$2^4 = 16$

Question 2

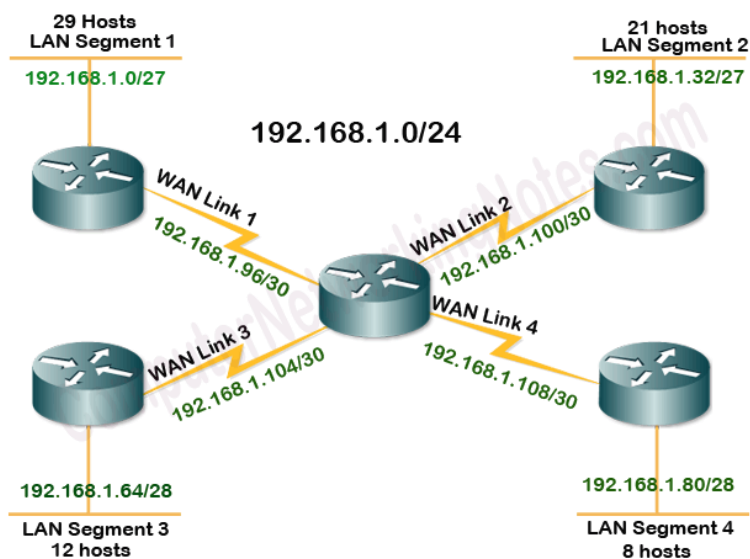
Allocate the IP addresses.

Identify them in the entire diagram and which classes they belong to/required. Jot them in the form of a table.



Solution

The given network after allocating IP addresses:



All of them belongs to class C:

Segments	CIDR	Subnet Mask	Host reqs.	Nearest block size	Network address	Valid host addresses
LAN Segment 1	/27	255.255.255.224	29	$2^5 = 32$	192.168.1.0	192.168.1.1 to 192.168.1.30
LAN Segment 2	/27	255.255.255.224	21	$2^5 = 32$	192.168.1.32	192.168.1.33 to 192.168.1.62
LAN Segment 3	/28	255.255.255.240	12	$2^4 = 16$	192.168.1.64	192.168.1.65 to 192.168.1.78
LAN Segment 4	/28	255.255.255.240	8	$2^4 = 16$	192.168.1.80	192.168.1.81 to 192.168.1.94
WAN Link 1	/30	255.255.255.252	2	$2^2 = 4$	192.168.1.96	192.168.1.97 to 192.168.1.98
WAN Link 2	/30	255.255.255.252	2	$2^2 = 4$	192.168.1.100	192.168.1.101 to 192.168.1.102
WAN Link 3	/30	255.255.255.252	2	$2^2 = 4$	192.168.1.104	192.168.1.105 to 192.168.1.106
WAN Link 4	/30	255.255.255.252	2	$2^2 = 4$	192.168.1.108	192.168.1.107 to 192.168.1.108