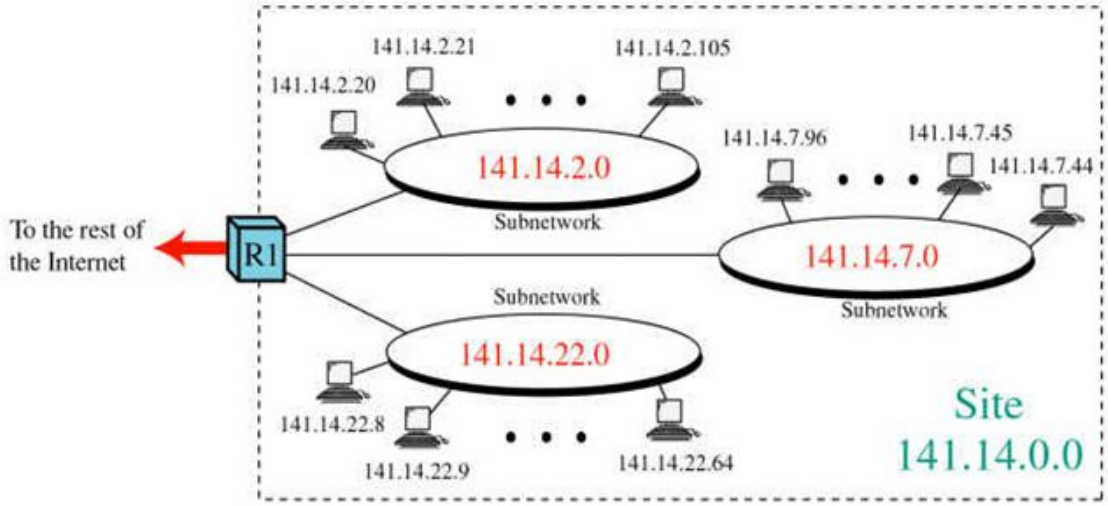
Subnetting
IP network bisa dibagi menjadi subnet yang lebih kecil.
Dengan subnet sebuah LAN dapat dipecah agar mudah dimanage.



Ada 2 tipe dari subnetting yaitu:
Static Subnetting
Variable Length Subnet Mask (VLSM)

Contoh pembahasan static subnetting di kelas sinkronus pada tanggal 11 November

Given network address = 204.17.5.0/24, create 8 subnet!

	Network Address (NA)	4th Octet of NA (in binary)	Subnet Mask	First Host	Last Host	
/27	204.17.5.0	x.x.x.00000000	255.255.255.224	x.x.x.1	x.x.x.30	0-31
/27	204.17.5.32	x.x.x.00100000	255.255.255.224	x.x.x.33	x.x.x.62	32-63
	204.17.5.64	x.x.x.01000000	255.255.255.224	x.x.x.65	x.x.x.94	64-95
	204.17.5.96	x.x.x.01100000	255.255.255.224	x.x.x.97	x.x.x.126	96-127
	204.17.5.128	x.x.x.10000000	255.255.255.224	x.x.x.129	x.x.x.158	
	204.17.5.160	x.x.x.10100000	255.255.255.224	x.x.x.161	x.x.x.190	
	204.17.5.192	x.x.x.11000000	255.255.255.224	x.x.x.193	x.x.x.222	
	204.17.5.224	x.x.x.11100000	255.255.255.224	x.x.x.225	x.x.x.254	

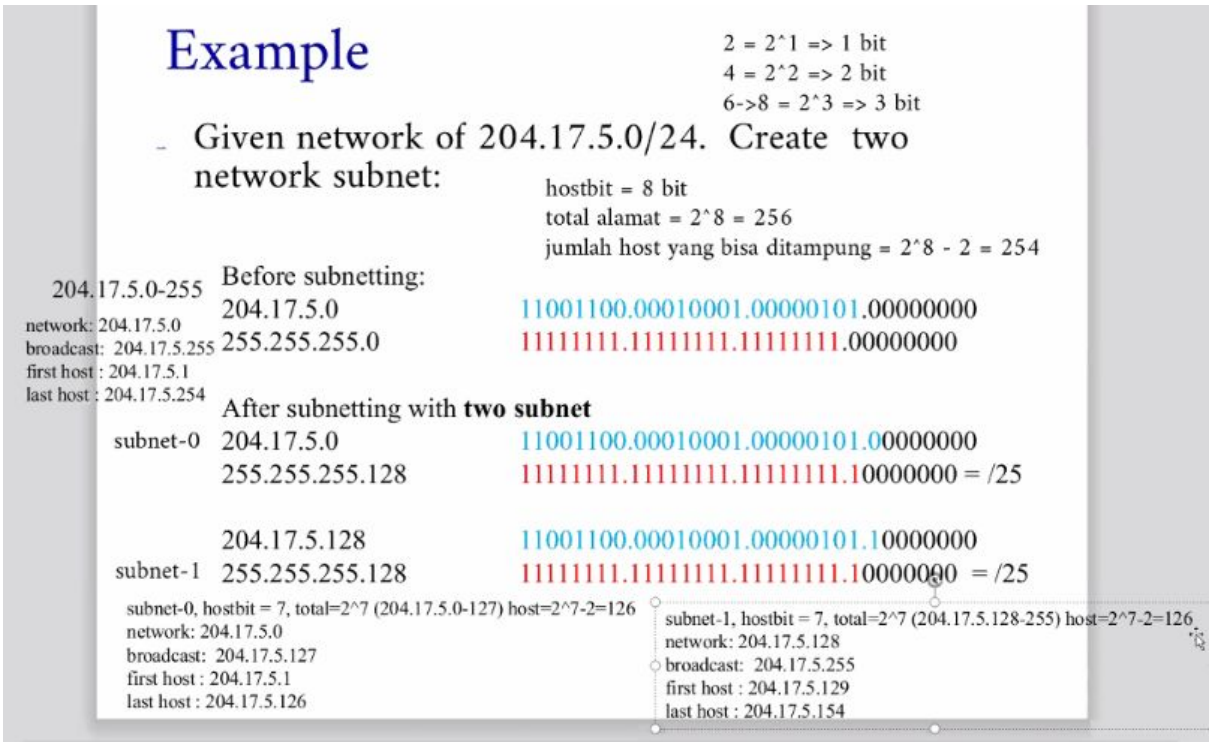
x.x.x = 204.17.5

Total Host = $2^n - 2 = 2^5-2=30$ Host
n = total bit for host id
Total Subnet = $2^m = 2^3 = 8$ Subnet
m = total bit for network id

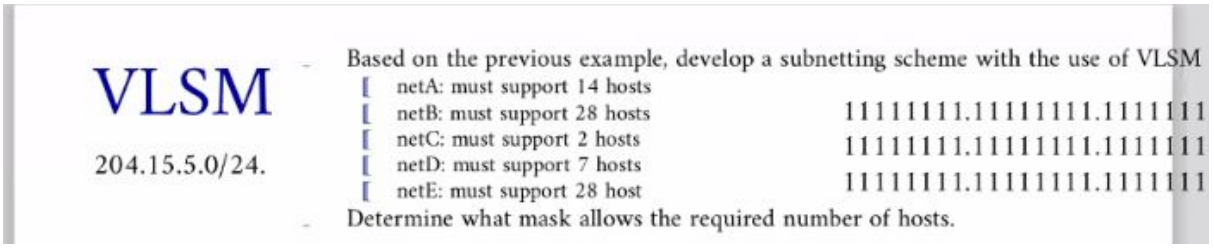
11111111.11111111.11111111.11100000
255.255.255.224

128
64
32

Untuk membagi menjadi 8 subnet, diperlukan 3 bit untuk diubah. Setiap bagian, terdapat bit untuk network dan broadcast sehingga terjadi pengurangan 2 bit untuk setiap host subnet.



Contoh pembahasan VLSM:



Subnet	Kebutuhan Host	Kebutuhan host(2^n-2)	(2^n)	n-host bit	network bit (32-host bit)	Subnet mask /x	Subnet mask Decimal
A	14	14	16	4	28	/28	255.255.255.240
B	28	30	32	5	27	/27	255.255.255.224
C	2	2	4	2	30	/30	255.255.255.252
D	7	14	16	4	28	/28	255.255.255.240
E	28	30	32	5	27	/27	255.255.255.224

Subnet	Kebutuhan host(2^n-2)	(2^n)	Subnet mask /x	Subnet mask Decimal	All Address	Network Address	Broadcast Address	First Host Address	Last Host Address
A	14	16	/28	255.255.255.240	64-79	204.15.5.64	204.15.5.79	204.15.5.65	204.15.5.78
B	30	32	/27	255.255.255.224	0-31	204.15.5.0	204.15.5.31	204.15.5.1	204.15.5.30
C	2	4	/30	255.255.255.252	96-99	204.15.5.96	204.15.5.99	204.15.5.97	204.15.5.98
D	14	16	/28	255.255.255.240	80-95	204.15.5.80	204.15.5.95	204.15.5.81	204.15.5.94
E	30	32	/27	255.255.255.224	32-63	204.15.5.32	204.15.5.63	204.15.5.33	204.15.5.62

Pada VLSM terjadi pembagian sesuai kebutuhan host pada setiap subnet. Pada pembahasan tersebut, subnet dengan jumlah host terbanyak akan mendapatkan prioritas address terlebih dahulu. Pada contoh tersebut, host B mendapatkan address dari 0-31