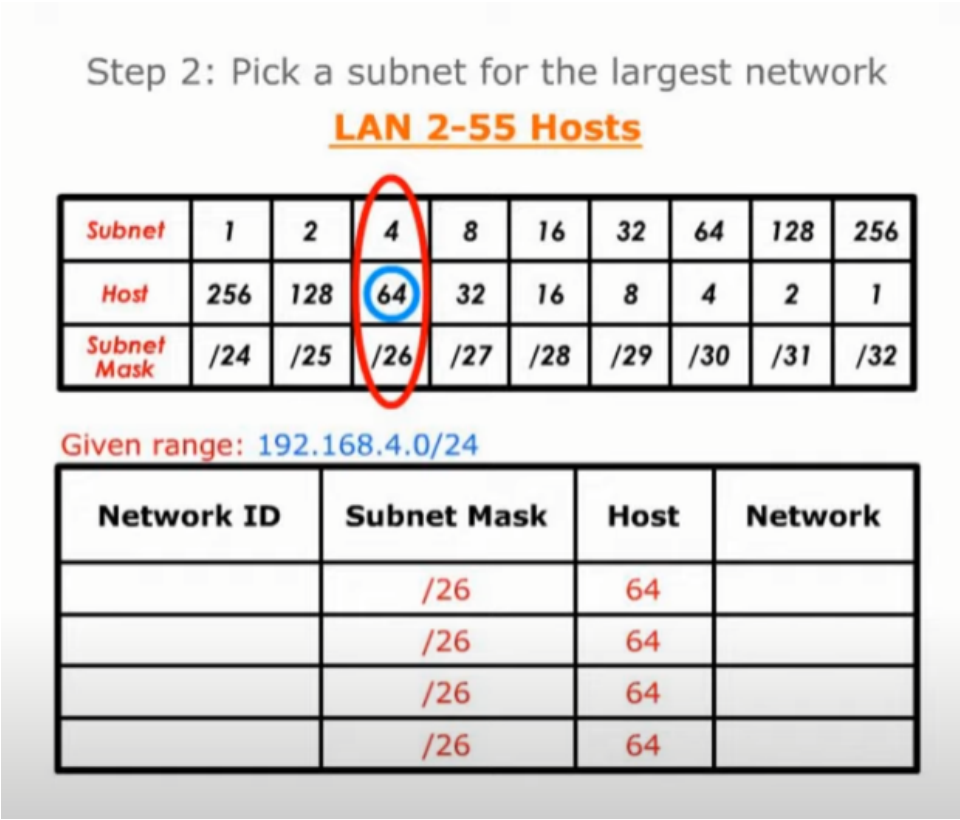
VLSM Subnetting - subnetting a subnet

Youtube: https://www.youtube.com/watch?v=RLCd5u0sjoU

Subnet	1	2	4	8	16	32	64	128	256
Host	256	128	64	32	16	8	4	2	1
Subnet Mask	/24	/25	/26	/27	/28	/29	/30	/31	/32

1. LAN 2-55 Hosts > Select a host value from the chart that is large enough for 55
2. Plug in the values into chart



3. Network ids:
    a. First network ID is always the original one
    b. Second is obtained by adding 64 to previous one
    c. And so forth

Given range: 192.168.4.0/24

Network ID	Subnet Mask	Host	Network
192.168.4.0	/26	64	
192.168.4.64	/26	64	
192.168.4.128	/26	64	
192.168.4.192	/26	64	

* We can assign any of these four subnets to LAN 2 because they are all equal size

Given range: 192.168.4.0/24

Network ID	Subnet Mask	Host	Network
192.168.4.0	/26	64	LAN 2
192.168.4.64	/26	64	Unused
192.168.4.128	/26	64	Unused
192.168.4.192	/26	64	Unused

The other three subnets are marked “unused” at this point

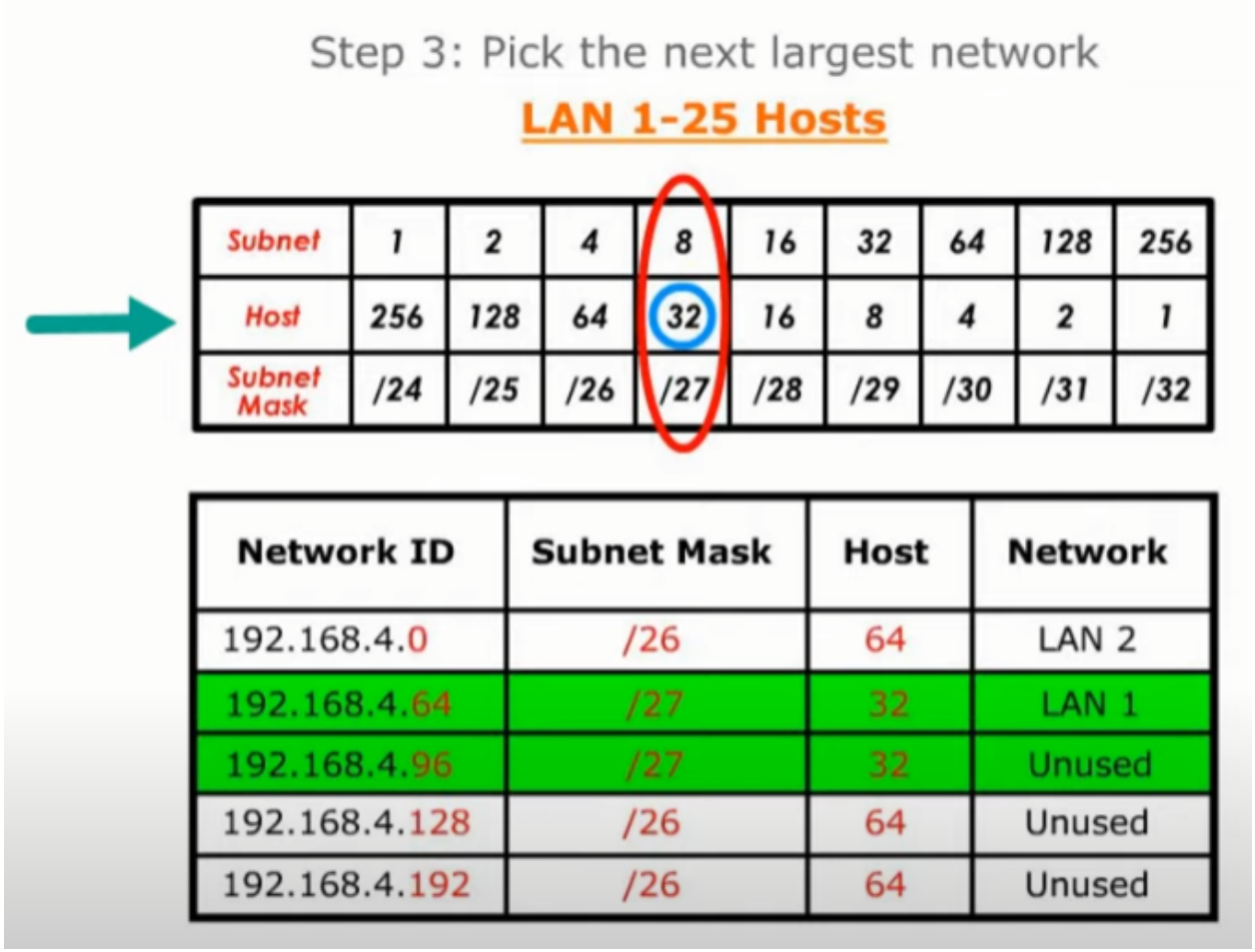
FIND REMAINING LAN HOSTS

Step 3: Pick the next largest network

LAN 1-25 Hosts

Subnet	1	2	4	8	16	32	64	128	256
Host	256	128	64	32	16	8	4	2	1
Subnet Mask	/24	/25	/26	/27	/28	/29	/30	/31	/32

Add these columns to your network chart in order:



Step 3: Pick the next largest network

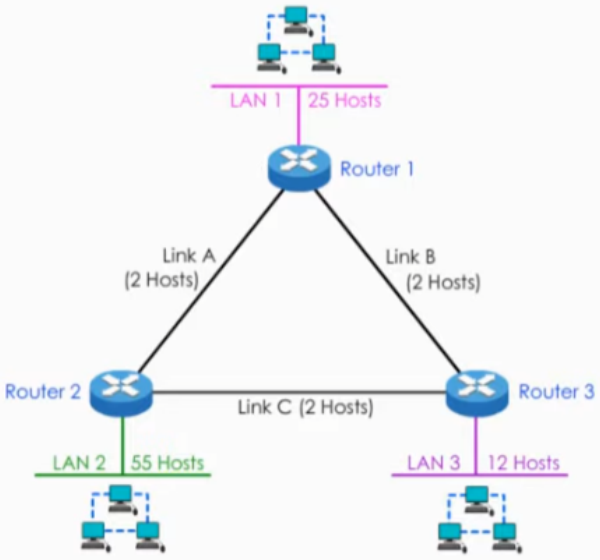
LAN 1-25 Hosts

Subnet	1	2	4	8	16	32	64	128	256
Host	256	128	64	32	16	8	4	2	1
Subnet Mask	/24	/25	/26	/27	/28	/29	/30	/31	/32

Network ID	Subnet Mask	Host	Network
192.168.4.0	/26	64	LAN 2
192.168.4.64	/27	32	LAN 1
192.168.4.96	/27	32	Unused
192.168.4.128	/26	64	Unused
192.168.4.192	/26	64	Unused

Next steps

Step 1: Arrange the networks from the largest to the smallest



1. LAN 2 - 55 hosts ✓
2. LAN 1 - 25 hosts ✓
3. LAN 3 - 12 hosts
4. Link A , B, C - 2 hosts

find a subnet for LAN 3 with 12 hosts.

Step 4: Pick the next largest network

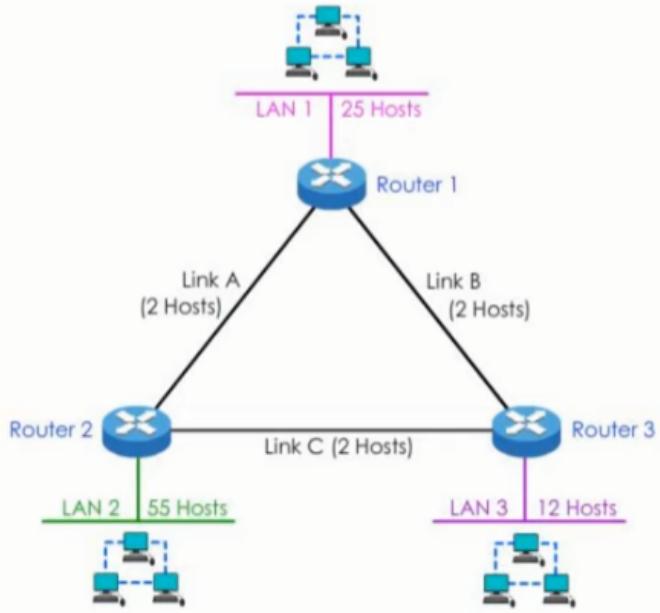
LAN 3-12 Hosts

Subnet	1	2	4	8	16	32	64	128	256
Host	256	128	64	32	16	8	4	2	1
Subnet Mask	/24	/25	/26	/27	/28	/29	/30	/31	/32

Network ID	Subnet Mask	Host	Network
192.168.4.0	/26	64	LAN 2
192.168.4.64	/27	32	LAN 1
192.168.4.96	/27	32	
192.168.4.128	/26	64	Unused
192.168.4.192	/26	64	Unused

Network ID	Subnet Mask	Host	Network
192.168.4.0	/26	64	LAN 2
192.168.4.64	/27	32	LAN 1
192.168.4.96	/28	16	LAN 3
192.168.4.112	/28	16	Unused
192.168.4.128	/26	64	Unused
192.168.4.192	/26	64	Unused

Step 1: Arrange the networks from the largest to the smallest



1. LAN 2 - 55 hosts ✓
2. LAN 1 - 25 hosts ✓
3. LAN 3 - 12 hosts ✓
4. Link A , B, C - 2 hosts

Step 5: Pick the next largest network

Link A, B, C – 2 Hosts

Subnet	1	2	4	8	16	32	64	128	256
Host	256	128	64	32	16	8	4	2	1
Subnet Mask	/24	/25	/26	/27	/28	/29	/30	/31	/32

Network ID	Subnet Mask	Host	Network
192.168.4.0	/26	64	LAN 2
192.168.4.64	/27	32	LAN 1
192.168.4.96	/28	16	LAN 3
192.168.4.112	/30	4	Link A
192.168.4.116	/30	4	Link B
192.168.4.120	/30	4	Link C
192.168.4.124	/30	4	Unused
192.168.4.128	/26	64	Unused
192.168.4.192	/26	64	Unused