S1-194.95.50.0/25

Topology

Generated Data

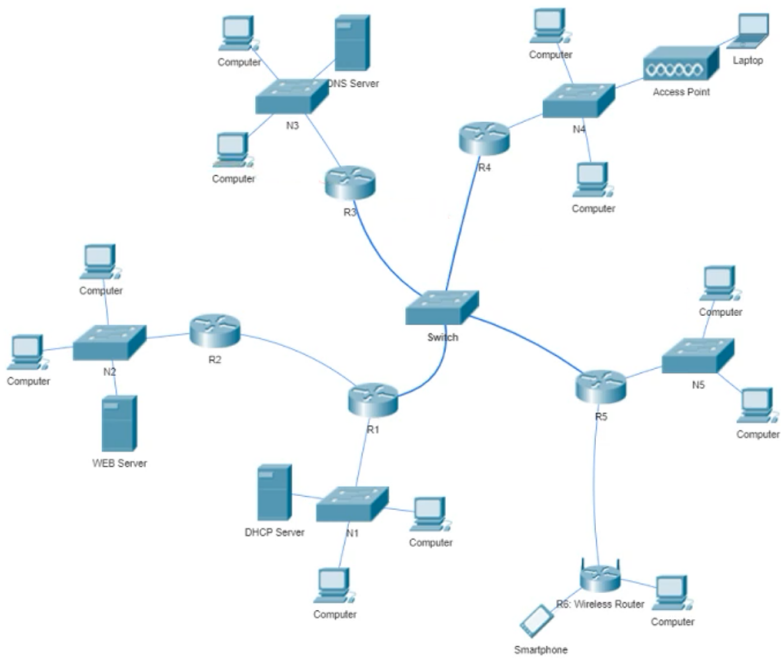
Network IP: 194.95.50.0

Mask: 255.255.255.128 (/25)

Sub networks:

- N1: 22 IP's
- N2: 20 IP's
- N3: 6 IP's
- N4: 10 IP's
- N5: 2 IP's

What other networks you need ?



Solving

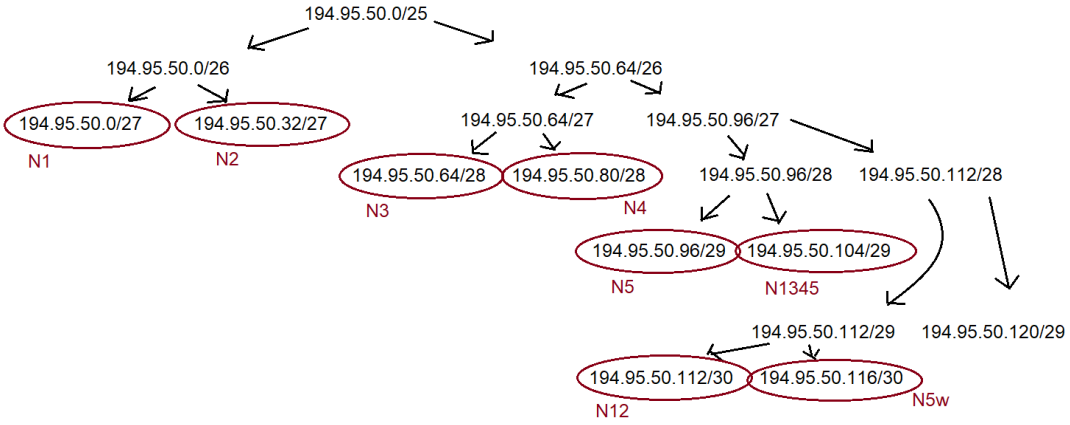
General formula: n devices + 1 router + 1 net address + 1 broadcast address ⇒ n+3

- N1 : 22 + 3 = 25 ≤ 32 = 2^5 (5 zeros and 27 ones) ⇒ mask /27
- N2: 20 + 3 = 23 ≤ 32 ⇒ /27
- N3: 9 ≤ 16 ⇒ /28
- N4: 13 ≤ 16 ⇒ /28
- N5: 5 ≤ 8 ⇒ /29
- N1345 (for the network that interconnects the routers 1, 3, 4 and 5) we need 4+2 for the net addr and broadcast addr ⇒ 6≤8 ⇒ /29
- N12 : 2+2 = 4 ⇒ /30
- N5w (N5 with the wireless): 2+2 = 4 ⇒ /30

Let's now check if we can solve the problem. Mask /25 means we have 2^7 (32-25=7) = 128 ip.

We need 32+32+16+16+8+8+4+4 = 120 ≤ 128 so we're ok.

We start to decompose the address using a binary tree.


194.95.50.0/25
194.95.50.0/26
194.95.50.64/26
194.95.50.0/27
194.95.50.32/27
194.95.50.64/27
194.95.50.96/27
N1
N2
194.95.50.64/28
194.95.50.80/28
194.95.50.96/28
194.95.50.112/28
N3
N4
194.95.50.96/29
194.95.50.104/29
N5
N1345
194.95.50.112/29
194.95.50.120/29
194.95.50.112/30
194.95.50.116/30
N12
N5w