What is Supernetting? (Route Summarization)

Supernetting is the opposite of Subnetting. In subnetting, a single big network is divided into multiple smaller subnetworks. In Supernetting, multiple networks are combined into a bigger network termed as a Supernetwork or Supernet.

Supernetting is mainly used in Route Summarization, where routes to multiple networks with similar network prefixes are combined into a single routing entry, with the routing entry pointing to a Super network, encompassing all the networks. This in turn significantly reduces the size of routing tables and also the size of routing updates exchanged by routing protocols.

How to supernet a network?

Combining these networks into one network: (A summarized route)

- **192.168.0.0/24**
- **192.168.1.0/24**
- **192.168.2.0/24**
- **192.168.3.0/24**

Step 1: Write all the IP Addresses in binary like so:

- 192.168.0.0/24

11000000.10101000.00000000.00000000

- 192.168.1.0/24

11000000.10101000.00000001.00000000

- 192.168.2.0/24

11000000.10101000.00000010.00000000

- 192.168.3.0/24

11000000.10101000.00000011.00000000

li**Step 2:** Find matching bits from left to right

11000000.10101000.00000000.00000000

11000000.10101000.00000001.00000000

11000000.10101000.00000010.00000000

11000000.10101000.00000011.00000000

Step 3: Re write the matching numbers and add the remaining zeros, because you are converting network bits into host bits. This will be your **NEW NETWORK ID**, the route that you will be advertising. (A summarized route)

11000000.10101000.00000000.00000000 = **192.168.0.0**

Step 4: Find the new subnet mask. Put "1s" in the matching networking part, and all zeros in the host part.

11111111.11111111.11111100.00000000

This your new subnet mask 255.255.252.0

- Your new summarized route is **192.168.0.0/22**